

The Keadby Next Generation Power Station Project

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**The Keadby Next Generation Power Station Development Consent
Order [year]**

Appendix 13A: Phase 1 Desk Based
Assessment Addendum

Annex 5 – Fugro (2023) Keadby 3 Low
Carbon Gas Power Station Project, Factual
Ground Investigation Report, March 2023

The Planning Act 2008

**The Infrastructure Planning (Environmental Impact Assessment)
Regulations 2017**

Applicant: Keadby Next Generation Limited

Date: August 2025

Version: V0

Document History

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Version	V0
Document Owner	Arup

Appendix I

Geophysical Surveys

Appendix I Contents

- I.1 Wireline Geophysics
 - I.1.1 Guidance Notes on Wireline Geophysics
 - I.1.2 Equipment Datasheets
 - I.1.3 Wireline Geophysical Results

I.1 Wireline Geophysics

I.1.1 Guidance Notes on Wireline Geophysics

I.1.1.1 Data Processing

All data was processed in WellCAD 5.4 software. This section summarizes the data processing steps applied for the different logging methods.

P- & S-Wave Suspension Logger Data:

- Frequency filtering data if necessary;
- Manual picking of P-wave arrival on near and far receiver wavetrain;
- Manual picking of S-Wave arrivals on near and far receiver wavetrain;
- Velocity calculation, data reduction, averaging for each depth point;
- Consistency check, Quality Control;
- Estimation of Poisson`s Ratio;
- Data visualisation (log and velocity table).

3 Arm Caliper Data:

- Interpolation of bad data values if necessary;
- Depth correction and merging of separately measured sections;
- Check for consistency with imager data;
- Data visualisation (log).

I.1.1.2 Data Presentation

PS Logger velocities were derived from the arrival times of the P and S channels. Velocities are presented together with calculated Poisson`s Ratio on a 1:100 depth scale plot.

I.1.2 Equipment Datasheets

Title	Reference
Equipment Datasheets	Referenced by Equipment Type
Equipment Calibration Certificates	Referenced by Equipment ID

COSHH ASSESSMENT REPORT

WD-40 Specialist Electrical Contact Cleaner *Liquid*

THE HAZARD 4 Very High
THE RISK 0 Minimum
Controls Adopted
Control: General ventilation, Wear appropriate PPE to avoid skin contact

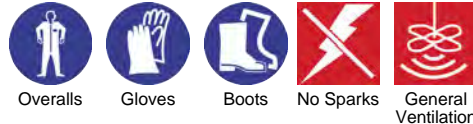
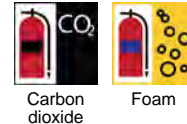
Respiratory Protection Factor: 20

INGREDIENTS	CAS NO	%	8HR OEL	15 MIN OEL
isopropanol	67-63-0	10-20	999 mg/m3	1250 mg/m3
1,1-difluoroethane	75-37-6	40-60	-	-
naphtha petroleum, light, hydrotreated.	64742-49-0.	20-30	-	-

ChemWatch Hazard Ratings

	Min	Max
Flammability	3	4
Toxicity	2	3
Body Contact	2	3
Reactivity	1	2
Chronic	2	3

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

PERSONAL PROTECTIVE EQUIPMENT

EMERGENCY

HEALTH HAZARDS

Hazard statement(s):

Extremely flammable aerosol. Pressurized container: may burst if heated.

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause drowsiness or dizziness.

Toxic to aquatic life with long lasting effects.

Suspected of damaging fertility. Suspected of damaging the unborn child.

Risk of explosion if heated under confinement.

May form explosive peroxides.

For making the best use of the controls, please follow the checklist below

- Make sure the room is well ventilated, and any extraction or air supply is switched on and working.

Precautionary statement(s): Prevention

Obtain special instructions before use.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Do not spray on an open flame or other ignition source.

Do not pierce or burn, even after use.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, eye protection and face protection.

Avoid breathing mist/vapours/spray.

Wash all exposed external body areas thoroughly after handling.

Do not eat, drink or smoke when using this product.

Avoid release to the environment.

Precautionary statement(s): Response

IF exposed or concerned: Get medical advice/ attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Collect spillage.

IF SWALLOWED: Call a POISON CENTER/doctor /physician/first aider if you feel unwell.

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

OPERATING TEMPERATURE:

20 C°

VOLATILITY/DUSTINESS:

medium

SCALE OF USE:

millilitres

FREQUENCY OF USE:

weekly, 30-60min

Code:

JOB NAME:

Date:

Version number:

Reassess:

No. Persons Exposed:

Assessed By:

Approved By:

Signed:

Signed:

OPERATING PROCEDURE:
Use in conjunction with site risk assessment.

MINI SDS

WD-40 Specialist Electrical Contact Cleaner

INGREDIENTS	CAS NO	%	8HR OEL
isopropanol	67-63-0	10-20	999 mg/m3
1,1-difluoroethane	75-37-6	40-60	-
naphtha petroleum, light, hydrotreated.	64742-49-0.	20-30	-

GHS	DG
	UN No: 1950 Hazchem Code: Not Applicable DG Class: 2.1 Subsidiary Risk: Not Applicable Packing Group: Not Applicable

PROPERTIES
Liquid. Gas. Extremely flammable. May form explosive peroxides.

EMERGENCY

HEALTH HAZARD INFORMATION
Signal word: Danger
Hazard statement(s):
H222+H229 Extremely flammable aerosol. Pressurized container: may burst if heated.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

FIRST AID
Swallowed: Contact Doctor or Poisons Centre. Do NOT give milk or oil. Do NOT give alcohol.
Skin: Wash with soap & water. Apply cleansing cream.
Advice To Doctor: NO adrenalin. Evaluate for respiratory distress. Consider lavage with cuffed tube. NO adrenalin. Severe exposure indicated by respiratory distress/hypotension Managements is essentially supportive.
Fire Fighting: Keep containers cool. Foam.
Spills and Disposal: Eliminate ignition sources. Control vapour with water spray/ fog. Absorb with dry agent. Stop leak if safe to do so. Use only in well ventilated areas. Take precautionary measures against static discharges. Dispose of this material and its container at hazardous or special waste collection point. This material and its container must be disposed of in a safe way. To clean the floor and all objects contaminated by this material, use water and detergent.

PRECAUTIONS FOR USE
Glasses: Consider chemical goggles.
Gloves: 1.NEOPRENE 2.NITRILE 3.PVC
Respirator: Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Storage and Transportation: Store in cool, dry, protected area. Use only in well ventilated areas. Take precautionary measures against static discharges. Dispose of this material and its container at hazardous or special waste collection point. Keep out of reach of children. Keep container in a well ventilated place. Keep away from food, drink and animal feeding stuffs. Keep away from heat. Keep away from sources of ignition. No smoking. Handle and open container with care.
Fire/Explosion Hazard: HIGHLY FLAMMABLE. Vapours/gas heavier than air. Toxic smoke/fumes in a fire. Risk of explosion if heated under confinement. Use only in well ventilated areas. Take precautionary measures against static discharges. Dispose of this material and its container at hazardous or special waste collection point. In case of fire and/or explosion, DO NOT BREATHE FUMES.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS
+ X + X + + +
X — Must not be stored together 0 — May be stored together with specific preventions + — May be stored together
<i>Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.</i>



Location: Depots

RISK ASSESSMENT FOR: Lubricant / JOB NAME: Lubricating / Penetrating Fluid.

COSHH ASSESSMENT REPORT

WD-40 liquid

THE HAZARD **0** Minimum

THE RISK **0** Minimum

Controls Adopted

Control: General ventilation, Always use in well ventilated area - take practical measures to improve or set up LEV., Wear appropriate PPE, Only used for short period of time, Use RPE (Disposable type for particulate hazards during task or half mask type for gas/vapour hazards) when working in poorly ventilated areas.

Respiratory Protection Factor: 0

INGREDIENTS	CAS NO	%	8HR OEL
white spirit	8052-41-3.	50	-
hydrocarbon propellant	68476-85-7.	25	1750 mg/m3
paraffinic distillate, heavy, solvent-dewaxed (mild)	64742-65-0	15	-

ChemWatch Hazard Ratings

	Min	Max
Flammability	0	
Toxicity	0	
Body Contact	0	
Reactivity	0	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

PERSONAL PROTECTIVE EQUIPMENT



Precautionary statement(s): Prevention

Not Applicable

Precautionary statement(s): Response

Not Applicable

Hazard statement(s):

Safety data sheet available on request.

OPERATING TEMPERATURE:

20 C°

VOLATILITY/DUSTINESS:

medium

SCALE OF USE:

millilitres

FREQUENCY OF USE:

daily, <30min

Code: **WAL-LUB_028**
JOB NAME: **Lubricating / Penetrati**
Date: **05/06/2019**
Reassess: **05/06/2024**
No. Persons Exposed: **FGSL Personnel**

Assessed By: **Niel Breach**
Signed:

Approved By: **Steve Dadd**
Signed:

OPERATING PROCEDURE:
Refer to relevant Task Risk Assessment.

MINI SDS

WD-40

INGREDIENTS	CAS NO	%	8HR OEL
white spirit	8052-41-3.	50	-
hydrocarbon propellant	68476-85-7.	25	1750 mg/m3
paraffinic distillate, heavy, solvent-dewaxed (mild)	64742-65-0	15	-

GHS	DG
Not Applicable	UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not Applicable Subsidiary Risk: Not Applicable Packing Group: Not Applicable

PROPERTIES

Liquid

EMERGENCY

Not Available

FIRST AID

Skin: Not Available

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



x — Must not be stored together
 0 — May be stored together with specific preventions
 + — May be stored together

HEALTH HAZARD INFORMATION

Signal word:	Not Applicable
Hazard statement(s):	Not Available

PRECAUTIONS FOR USE



COSHH ASSESSMENT REPORT

Dow Corning Molykote 33 Extreme Low Temp. Bearing Grease, Medium *Non Slump Paste*

THE HAZARD **0** Minimum

THE RISK **0** Minimum

Controls Adopted

Control: General ventilation, Wear appropriate PPE, Only used for short period of time **Respiratory Protection Factor: 0**

INGREDIENTS	CAS NO	%	8HR OEL
dimethyl, phenylmethylpolysiloxane, trimethyl terminated	63148-52-7	NotSpec.	-
lithium stearate	4485-12-5	10-<20	-

ChemWatch Hazard Ratings

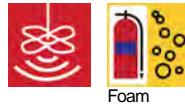
	Min	Max
Flammability	1	1
Toxicity	1	1
Body Contact	1	1
Reactivity	1	1
Chronic	0	0

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

PERSONAL PROTECTIVE EQUIPMENT



EMERGENCY



FIRST AID



Hazard statement(s):

Not Available

**Precautionary statement(s):
Prevention**

Not Applicable

**Precautionary statement(s):
Response**

Not Applicable

OPERATING TEMPERATURE:

20 C°

VOLATILITY/DUSTINESS:

medium

SCALE OF USE:

litres

FREQUENCY OF USE:

weekly, <30min

Code: **FAL-LUB_054**
 JOB NAME: **Low Temp Bearing Gre**
 Date: **14/10/2018**
 Reassess: **14/10/2021**
 No. Persons Exposed: **FGSL Personnel**

Assessed By: **Gregg Renfree**
 Signed:

Approved By: **Steve Dadd**
 Signed:

OPERATING PROCEDURE:
 Assessment to be used in conjunction with Manufacturers instructions and applicable Task Risk Assessment.

MINI SDS

Dow Corning Molykote 33 Extreme Low Temp. Bearing Grease, Medium

INGREDIENTS	CAS NO	%	8HR OEL
dimethyl, phenylmethylpolysiloxane, trimethyl terminated	63148-52-7	NotSpec.	-
lithium stearate	4485-12-5	10-<20	-

GHS	DG
Not Applicable	UN No: Not Applicable Hazchem Code: Not Applicable DG Class: Not Applicable Subsidiary Risk: Not Applicable Packing Group: Not Applicable

PROPERTIES



Liquid. Combustible.

EMERGENCY



FIRST AID

Swallowed:	Give water (if conscious). Seek medical advice.
Eye:	Wash with running water.
Skin:	Remove contaminated clothing. Wash with soap & water.
Inhaled:	Fresh air. Rest, keep warm.
Advice To Doctor:	Treat symptomatically. Emesis for severe ingestions.
Fire Fighting:	Foam.
Spills and Disposal:	Eliminate ignition sources. Absorb with dry agent. Stop leak if safe to do so.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



x — Must not be stored together
o — May be stored together with specific preventions
+ — May be stored together

HEALTH HAZARD INFORMATION

Signal word: Not Applicable

Hazard statement(s): Not Available

PRECAUTIONS FOR USE



Appropriate engineering controls:	General Exhaust Ventilation adequate.
Glasses:	Consider chemical goggles.
Gloves:	PVC chemical resistant type.
Respirator:	Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Storage and Transportation:	Store in cool, dry, protected area.
Fire/Explosion Hazard:	Toxic smoke/fumes in a fire.

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E-mail: info@jhlifting.co.uk

This report complies with the requirements of the Lifting Operations and Lifting Equipment Regulations 1998



Lifting Equipment Engineers Association



REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

Customer Order Number		Sales Job No 127480
Date of Examination 09/09/2022	Date of Report 12/09/2022	Report Number 134415

Organisation for whom the thorough examination was made Fugro GeoServices Ltd Fugro House Hithercroft Road Wallingford Oxfordshire OX10 9RB	Location at which the thorough examination was made Fugro GeoServices Ltd Unit T Hithercroft Road Wallingford Oxfordshire OX10 9RB
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Qty	Description & Identification of the Equipment	Safe Working Load(s)	Date of Last Thorough Examination (If Known)
1	Tripod mounted rig up sheave pulley type SHWUP2-00 c/w 3 off aluminium legs ID Mark: SW03/WE449, SW031, SW032, SW033	55 kg	04/03/2022

Has this Equipment been... Supplied New Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Supplied Reconditioned Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined Only Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Examined & Tested Only Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined, Repaired & Tested Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Was the Examination carried out... Before being issued for the first time Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 6 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 12 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> As part of an Examination Scheme Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> After Exceptional Circumstances Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Identification of any part found to have a defect that could become a danger to persons and a description of the defect. (If none, state NONE)
 one leg has 'R' clip missing, to be replaced before use

Is the above a defect which is of immediate danger to persons? Yes No

If not an immediate danger, when might it become dangerous to persons without rectification? Date:

Particulars of any repair, renewal or alteration required to remedy the defect identified above

Particulars of any tests carried out as part of the examination. (If none, state NONE)
 NONE

IS THIS EQUIPMENT SAFE TO USE / OPERATE? Yes No

Person making this report David Thurman-Newell Qualifications: LEEA TEAM Card	Person authenticating this report Shaun Broad Qualifications: LEEA TEAM Card	Latest date by which next thorough examination must be carried out: 08/03/2023
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Lifting Equipment Engineers Association



REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

Customer Order Number		Sales Job No 127480
Date of Examination 09/09/2022	Date of Report 12/09/2022	Report Number 134413

Organisation for whom the thorough examination was made Fugro GeoServices Ltd Fugro House Hithercroft Road Wallingford Oxfordshire OX10 9RB	Location at which the thorough examination was made Fugro GeoServices Ltd Unit T Hithercroft Road Wallingford Oxfordshire OX10 9RB
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Qty	Description & Identification of the Equipment	Safe Working Load(s)	Date of Last Thorough Examination (If Known)
1	Split 'T' bar wire rope clamp ID Mark: PO46087	N/A	04/03/2022

Has this Equipment been...		Was the Examination carried out...	
Supplied New	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Before being issued for the first time	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Supplied Reconditioned	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Within an interval of 6 months	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Examined Only	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Within an interval of 12 months	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Examined & Tested Only	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	As part of an Examination Scheme	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Examined, Repaired & Tested	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	After Exceptional Circumstances	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Identification of any part found to have a defect that could become a danger to persons and a description of the defect. (If none, state NONE)

NONE

Is the above a defect which is of immediate danger to persons?

Yes No

If not an immediate danger, when might it become dangerous to persons without rectification?

Date:

Particulars of any repair, renewal or alteration required to remedy the defect identified above

Particulars of any tests carried out as part of the examination. (If none, state NONE)

NONE

IS THIS EQUIPMENT SAFE TO USE / OPERATE?

Yes No

Person making this report

David Thurman-Newell

Qualifications: LEEA TEAM Card

Person authenticating this report

Shaun Broad

Qualifications: LEEA TEAM Card

Latest date by which next thorough examination must be carried out:

08/03/2023

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Operations and Lifting Equipment Regulations 1998



Lifting Equipment Engineers Association



REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

Customer Order Number		Sales Job No 127480
Date of Examination 09/09/2022	Date of Report 12/09/2022	Report Number 134416

Organisation for whom the thorough examination was made Fugro GeoServices Ltd Fugro House Hithercroft Road Wallingford Oxfordshire OX10 9RB	Location at which the thorough examination was made Fugro GeoServices Ltd Unit T Hithercroft Road Wallingford Oxfordshire OX10 9RB
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Qty	Description & Identification of the Equipment	Safe Working Load(s)	Date of Last Thorough Examination (If Known)
2	Single sheave snatch block ID Mark: APE4416 APE4415	500 kg	04/03/2022

Has this Equipment been...	Was the Examination carried out...
Supplied New Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Before being issued for the first time Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Supplied Reconditioned Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Within an interval of 6 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Examined Only Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Within an interval of 12 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Examined & Tested Only Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	As part of an Examination Scheme Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Examined, Repaired & Tested Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	After Exceptional Circumstances Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Identification of any part found to have a defect that could become a danger to persons and a description of the defect. (If none, state NONE)

NONE

Is the above a defect which is of immediate danger to persons?

Yes No

If not an immediate danger, when might it become dangerous to persons without rectification?

Date:

Particulars of any repair, renewal or alteration required to remedy the defect identified above

Particulars of any tests carried out as part of the examination. (If none, state NONE)

NONE

IS THIS EQUIPMENT SAFE TO USE / OPERATE?

Yes No

Person making this report

David Thurman-Newell

Qualifications: LEEA TEAM Card

Person authenticating this report

Shaun Broad

Qualifications: LEEA TEAM Card

Latest date by which next thorough examination must be carried out:

08/03/2023

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Lifting Equipment Engineers Association



REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

Customer Order Number		Sales Job No 127480
Date of Examination 09/09/2022	Date of Report 12/09/2022	Report Number 134404

Organisation for whom the thorough examination was made Fugro GeoServices Ltd Fugro House Hithercroft Road Wallingford Oxfordshire OX10 9RB	Location at which the thorough examination was made Fugro GeoServices Ltd Unit T Hithercroft Road Wallingford Oxfordshire OX10 9RB
--	---

Qty	Description & Identification of the Equipment	Safe Working Load(s)	Date of Last Thorough Examination (If Known)
2	Geovosta GV560 probe data logging wire rope winch fitted with 1500m cable ID Mark: 8180 8181	180 kg	04/03/2022

Has this Equipment been... Supplied New Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Supplied Reconditioned Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined Only Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Examined & Tested Only Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined, Repaired & Tested Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Was the Examination carried out... Before being issued for the first time Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 6 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 12 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> As part of an Examination Scheme Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> After Exceptional Circumstances Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Identification of any part found to have a defect that could become a danger to persons and a description of the defect. (If none, state NONE)
NONE

Is the above a defect which is of immediate danger to persons? Yes No

If not an immediate danger, when might it become dangerous to persons without rectification? Date:

Particulars of any repair, renewal or alteration required to remedy the defect identified above

Particulars of any tests carried out as part of the examination. (If none, state NONE)
NONE

IS THIS EQUIPMENT SAFE TO USE / OPERATE? Yes No

Person making this report David Thurman-Newell Qualifications: LEEA TEAM Card	Person authenticating this report Shaun Broad [REDACTED] Qualifications: LEEA TEAM Card	Latest date by which next thorough examination must be carried out: 08/03/2023
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REPORT OF THOROUGH EXAMINATION OF LIFTING EQUIPMENT

Customer Order Number		Sales Job No 127480
Date of Examination 09/09/2022	Date of Report 12/09/2022	Report Number 134412

Organisation for whom the thorough examination was made Fugro GeoServices Ltd Fugro House Hithercroft Road Wallingford Oxfordshire OX10 9RB	Location at which the thorough examination was made Fugro GeoServices Ltd Unit T Hithercroft Road Wallingford Oxfordshire OX10 9RB
--	---

Qty	Description & Identification of the Equipment	Safe Working Load(s)	Date of Last Thorough Examination (If Known)
5	3/4" x 7/8" dia HT large Dee shackle generally to BS3032 table 2. Type A pin. ID Mark: 21B297 21B299 21B298 21B300 21B296	2 ton	04/03/2022

Has this Equipment been... Supplied New Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Supplied Reconditioned Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined Only Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Examined & Tested Only Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Examined, Repaired & Tested Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Was the Examination carried out... Before being issued for the first time Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 6 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Within an interval of 12 months Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> As part of an Examination Scheme Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> After Exceptional Circumstances Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Identification of any part found to have a defect that could become a danger to persons and a description of the defect. (If none, state NONE)
NONE

Is the above a defect which is of immediate danger to persons? Yes No

If not an immediate danger, when might it become dangerous to persons without rectification? Date:

Particulars of any repair, renewal or alteration required to remedy the defect identified above

Particulars of any tests carried out as part of the examination. (If none, state NONE)
NONE

IS THIS EQUIPMENT SAFE TO USE / OPERATE? Yes No

Person making this report
David Thurman-Newell
Qualifications: LEEA TEAM Card

Person authenticating this report
Shaun Broad
Qualifications: LEEA TEAM Card
Signature [REDACTED]

Latest date by which next thorough examination must be carried out:
08/03/2023

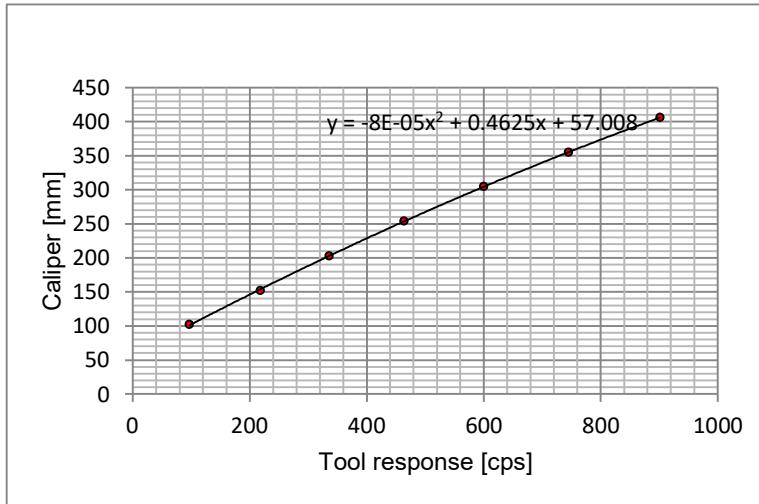


CAL3
QC/QA-TEST-CERTIFICATE
 (v.10/2019)

Date: 24-05-2022 **Surface Unit:** ScoutPro (211314)
Engineer: H.Spence **Laptop:** Field Laptop
Winch: GV-510 **Tool:** ALT CAL 6570 (Short Arms)

3-ARM-CALIPER

Caliper [mm]	Response [cps]
102	96.60
152	218.00
203	335.96
254	463.68
305	600.00
355	745.00
406	901.84



3-ARM-CALIPER OK

This is to certify that the specified tool has been assembled, calibrated and quality controlled according to Fugro's calibration and verification standards. The system will comply with product technical specifications if used in accordance with recommended operating procedures.

Certificate valid until: 24-05-2023

Date **Name/Signature (wireline engineer)**
 24-05-22



FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	560
S/N	8181

Depth Encoder Specification	
Brand	Lyka Electronics
Model	CK46
Pulses per revolution	1000
Operational Voltage	5-12V

Logging Interface	
Brand	ALT
Model	Matrix
Serial Number	0916

CALIBRATION PARAMETERS	
Calibration distance	75m
Amount of pulses per rotation*	4000
Wheel Circumference	0.4005364
Verification run error**	+/- 0.01m

*For depth encoder mode

**Verification error per calibration distance

Date of Calibration: 21-Sep-22

Calibrated by: Adrian Wilson
Martin Baron

Place of Calibration: Wallingford



TENSION CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	560
S/N	8181

Logging Interface	
Brand	ALT
Model	ScoutPro
Serial Number	211314

CALIBRATION PARAMETERS		
		Readings
Calibration weight : Low	2.3 kg	496
Calibration weight : High	30.3 kg	649
Tension Gauge CalA:		0.183030993
Tension Gauge CalB:		-88.48819733

Date of Calibration: 22-Sep-22

Calibrated by:

Denes Gartner

Hamish Spence

Place of Calibration: Consett





FUGRO GEOSERVICES LIMITED

DEPTH ENCODER CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	560
S/N	8181

Depth Encoder Specification	
Brand	Lyka Electronics
Model	CK46
Pulses per revolution	1000
Operational Voltage	5-12V

Logging Interface	
Brand	GeoVista
Model	GVI
Serial Number	7270

CALIBRATION PARAMETERS	
Calibration distance	75m
Amount of pulses per rotation*	1000
Wheel Circumference	0.4005364
Verification run error**	+/- 0.01m

*For depth encoder mode

**Verification error per calibration distance

Date of Calibration: 21-Sep-22

Calibrated by: Adrian Wilson
Martin Baron

Place of Calibration: Wallingford

TENSION CALIBRATION CERTIFICATE

Winch Information	
Brand	GeoVista
Model	560
S/N	8181

Logging Interface	
Brand	ALT
Model	ScoutPro
Serial Number	211314

CALIBRATION PARAMETERS		
		Readings
Calibration weight : Low	2.3 kg	496
Calibration weight : High	30.3 kg	649
Tension Gauge CalA:		0.183030993
Tension Gauge CalB:		-88.48819733

Date of Calibration: 22-Sep-22

Calibrated by:

Denes Gartner

Hamish Spence

Place of Calibration: Consett





PSL

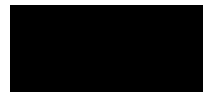
QC/QA-TEST-CERTIFICATE
(v.01/2017)

Date: 22-09-22 **Surface Unit:** GV 7270
Engineer: A. Wilson **Laptop:** FGSLWALL378
 M. Baron
Winch: GV 550 S/N:8181 **Tool:** PSL-8387

TEST NAME	TEST DATE	STATUS
TOOL FUNCTIONALITY TEST (as per tool operations manual)	22-09-22	PASSED

Certificate Valid Until: 22-09-23

Date **Location** **Name/Signature (wireline engineer)**
22-09-22 Wallingford, UK Denes Gartner



I.1.3 Wireline Geophysical Results

Title	Reference
P- & S- Wave Suspension	Referenced by Location ID

MS-BH10 Velocity Table

*) wave arrival not detectable / velocity not calculable

Depth (m)	Vp (m/s)	Vs (m/s)	Vp/Vs ratio	Poisson`s ratio
17.00	2604	876	2.97	0.44
17.50	2378	834	2.85	0.43
18.00	2084	720	2.90	0.43
18.50	2178	707	3.08	0.44
19.00	2190	670	3.27	0.45
19.50	2485	803	3.09	0.44
20.00	2396	875	2.74	0.42
20.50	2746	1253	2.19	0.37
21.00	3430	1450	2.37	0.39
21.50	2778	1046	2.66	0.42
22.00	2837	1243	2.28	0.38
22.50	3561	1640	2.17	0.37
23.00	3101	1225	2.53	0.41
23.50	2575	1066	2.41	0.40
24.00	2963	1334	2.22	0.37
24.50	3604	1944	1.85	0.29
25.00	3069	1340	2.29	0.38
25.50	2432	901	2.70	0.42
26.00	2210	772	2.86	0.43
26.50	2500	1074	2.33	0.39
27.00	3334	1705	1.96	0.32
27.50	3419	1461	2.34	0.39
28.00	3061	1294	2.37	0.39
28.50	2958	1485	1.99	0.33
29.00	3637	1719	2.12	0.36
29.50	3469	1765	1.97	0.33
30.00	3638	1823	2.00	0.33
30.50	3582	1736	2.06	0.35
31.00	3282	1676	1.96	0.32
31.50	3306	1559	2.12	0.36
32.00	3200	1567	2.04	0.34
32.50	3023	1474	2.05	0.34
33.00	3023	1443	2.09	0.35
33.50	2956	1422	2.08	0.35
34.00	3134	1539	2.04	0.34
34.50	3352	1600	2.10	0.35
35.00	2844	1409	2.02	0.34
35.50	2553	1314	1.94	0.32
36.00	2439	1282	1.90	0.31
36.50	2461	1379	1.78	0.27



WIRELINE GEOPHYSICAL LOG

Type: **3 Arm Caliper and P&S Logger Plot**

Client: SSE Generation Limited

Client Representative: n.s.

Logging Date:

Borehole: MS-BH10

Fugro Site Manager: Jessica Lewis

27/10/2022

Project No.: F212561

Project Title: Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation

Log Approved by: D. Gartner

Country: United Kingdom

Position: E: 482088.3, N: 412006.2

Grid Reference: OSGB

Elevation: 0.707 mOD

Borehole Depth (Drilling): 40.00 m

Recorded By: A. Wilson, M. Baron

Processed By: G. Whitehouse

Borehole Depth (Wireline): 39.31 m

Remarks:

Logging Datum: Ground Level

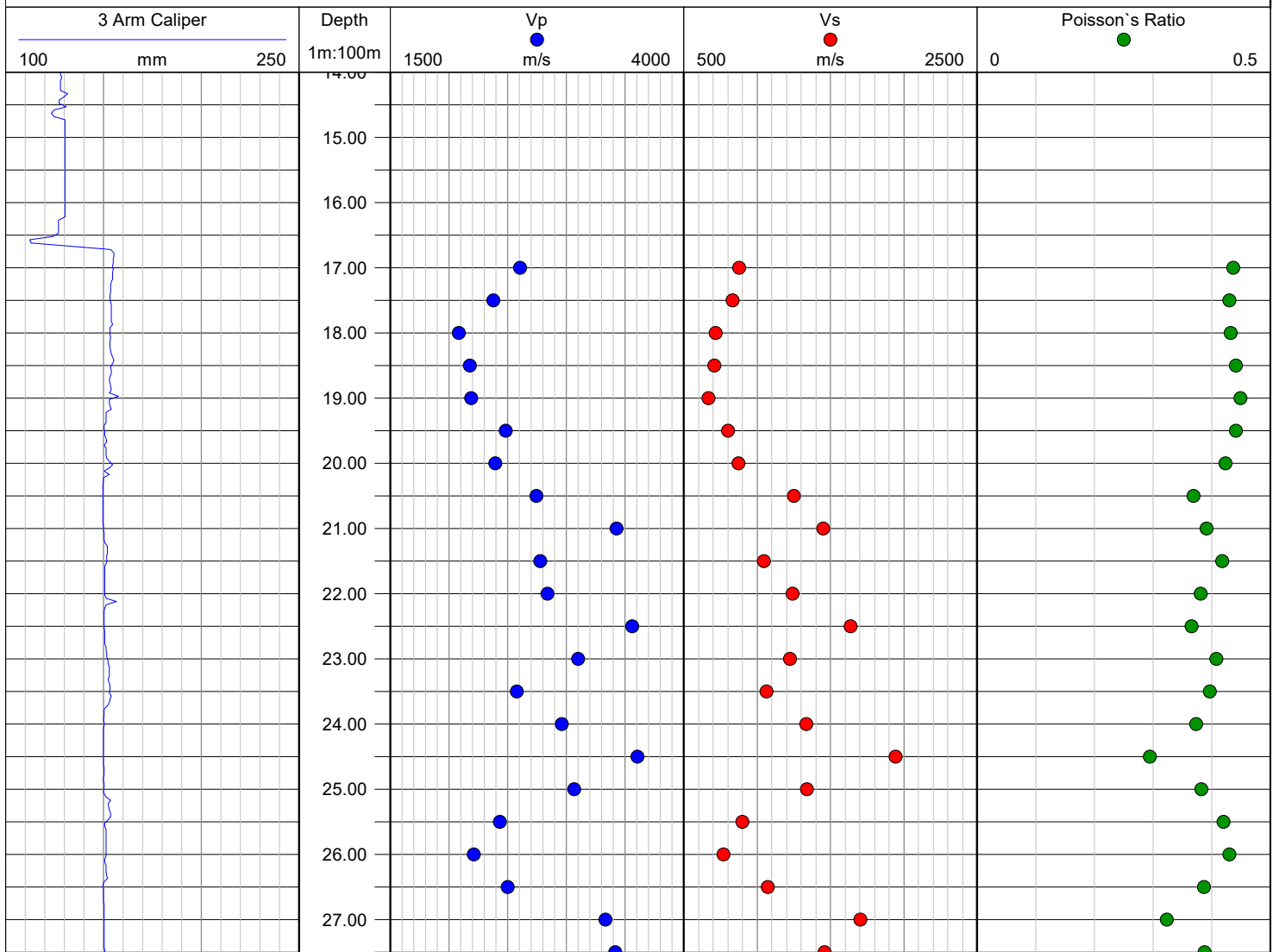
Logged Interval: 14.00 m - 39.31 m

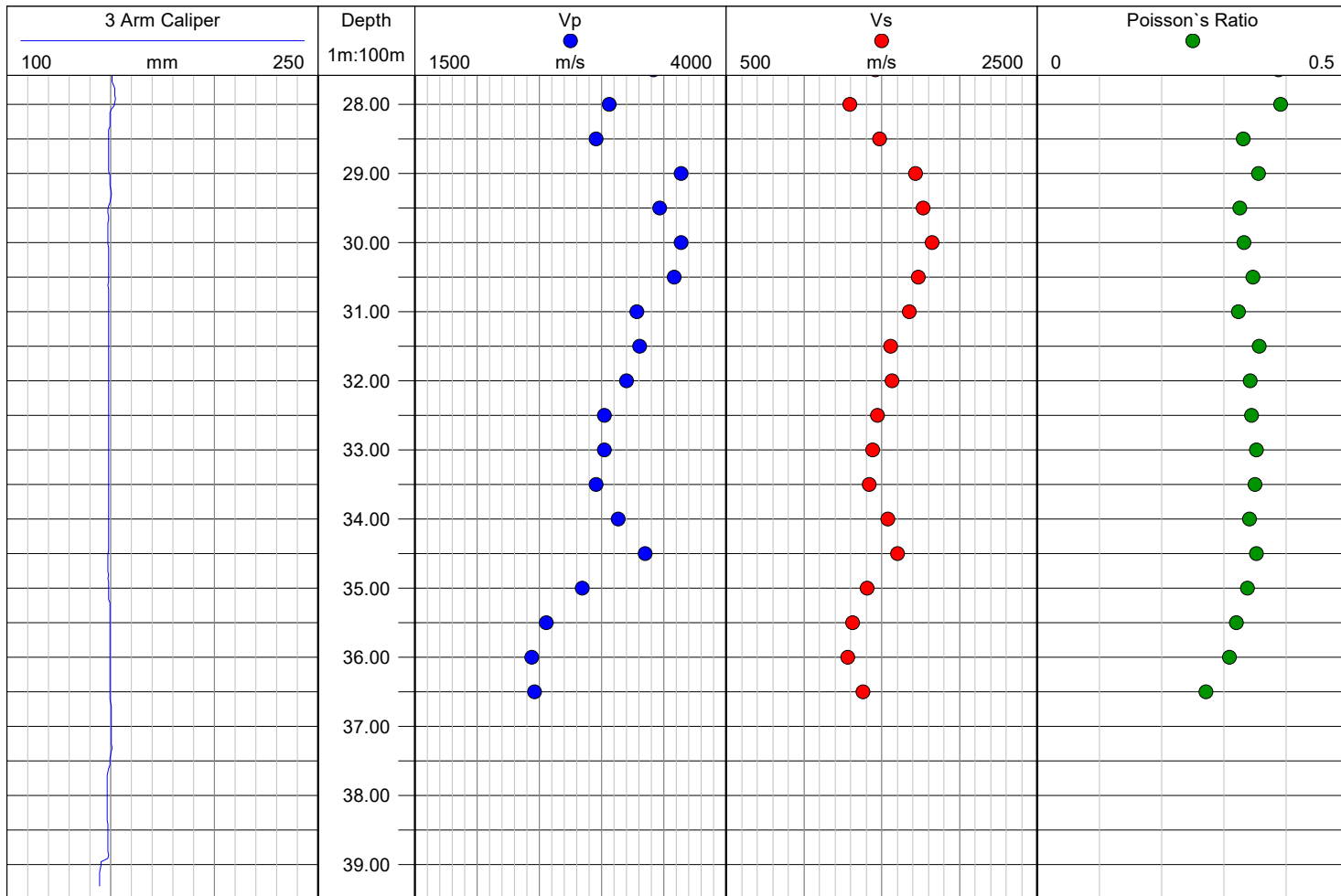
Fluid Level: 0.00 m

BOREHOLE RECORD (DRILLING)

CASING RECORD (DRILLING)

Bit Diameter:	From:	To:	Type:	Size:	From:	To:
203 mm	0.00 m	16.00 m	Steel	203 mm	0.00 m	16.00 m
146 mm	16.00 m	40.00 m	Steel	146 mm	0.00 m	16.50 m





MS-BH12 Velocity Table

*) wave arrival not detectable / velocity not calculable

Depth (m)	Vp (m/s)	Vs (m/s)	Vp/Vs ratio	Poisson`s ratio
15.50	1997	*)	*)	*)
16.00	2170	697	3.11	0.44
16.50	2388	814	2.93	0.43
17.00	2449	837	2.93	0.43
17.50	2162	668	3.24	0.45
18.00	2076	671	3.10	0.44
18.50	2381	731	3.26	0.45
19.00	2405	888	2.71	0.42
19.50	2521	892	2.83	0.43
20.00	3235	1291	2.51	0.41
20.50	3008	1194	2.52	0.41
21.00	2885	1154	2.50	0.40
21.50	3217	1225	2.63	0.42
22.00	2655	1097	2.42	0.40
22.50	2746	1192	2.30	0.38
23.00	2730	1245	2.19	0.37
23.50	2844	1243	2.29	0.38
24.00	4056	1437	2.82	0.43
24.50	3127	1146	2.73	0.42
25.00	2190	815	2.69	0.42
25.50	2235	823	2.72	0.42
26.00	2679	1246	2.15	0.36
26.50	3723	1404	2.65	0.42
27.00	3109	1311	2.37	0.39
27.50	3031	1371	2.21	0.37
28.00	3674	1551	2.37	0.39
28.50	3551	1599	2.22	0.37
29.00	3729	1644	2.27	0.38
29.50	3824	1613	2.37	0.39
30.00	3604	1500	2.40	0.40
30.50	3352	1493	2.25	0.38
31.00	3510	1605	2.19	0.37
31.50	3175	1471	2.16	0.36
32.00	3030	1426	2.13	0.36
32.50	3243	1498	2.17	0.36
33.00	3574	1543	2.32	0.39
33.50	3079	1258	2.45	0.40
34.00	2597	1167	2.23	0.37
34.50	2717	1221	2.23	0.37
35.00	2620	1191	2.20	0.37
35.50	2682	1277	2.10	0.35
36.00	3226	1367	2.36	0.39
36.50	2449	1251	1.96	0.32



Depth (m)	Vp (m/s)	Vs (m/s)	Vp/Vs ratio	Poisson`s ratio
37.00	2281	1116	2.04	0.34
37.50	*)	*)	*)	*)
38.00	2128	1097	1.94	0.32
38.50	2233	1139	1.96	0.32
39.00	2621	1213	2.16	0.36
39.50	2702	1205	2.24	0.38



WIRELINE GEOPHYSICAL LOG

Type: **3 Arm Caliper and P&S Logger Plot**

Client: SSE Generation Limited

Client Representative: n.s.

Logging Date:

Borehole: MS-BH12

Fugro Site Manager: Jessica Lewis

14/10/2022

Project No.: F212561

Project Title: Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation

Log Approved by: D. Gartner

Country: United Kingdom

Position: E: 482090.8, N: 411953.3

Grid Reference: OSGB

Elevation: 0.742 mOD

Borehole Depth (Drilling): 42.00 m

Recorded By: A. Wilson

Processed By: G. Whitehouse

Borehole Depth (Wireline): 41.50 m

Remarks:

Logging Datum: Ground Level

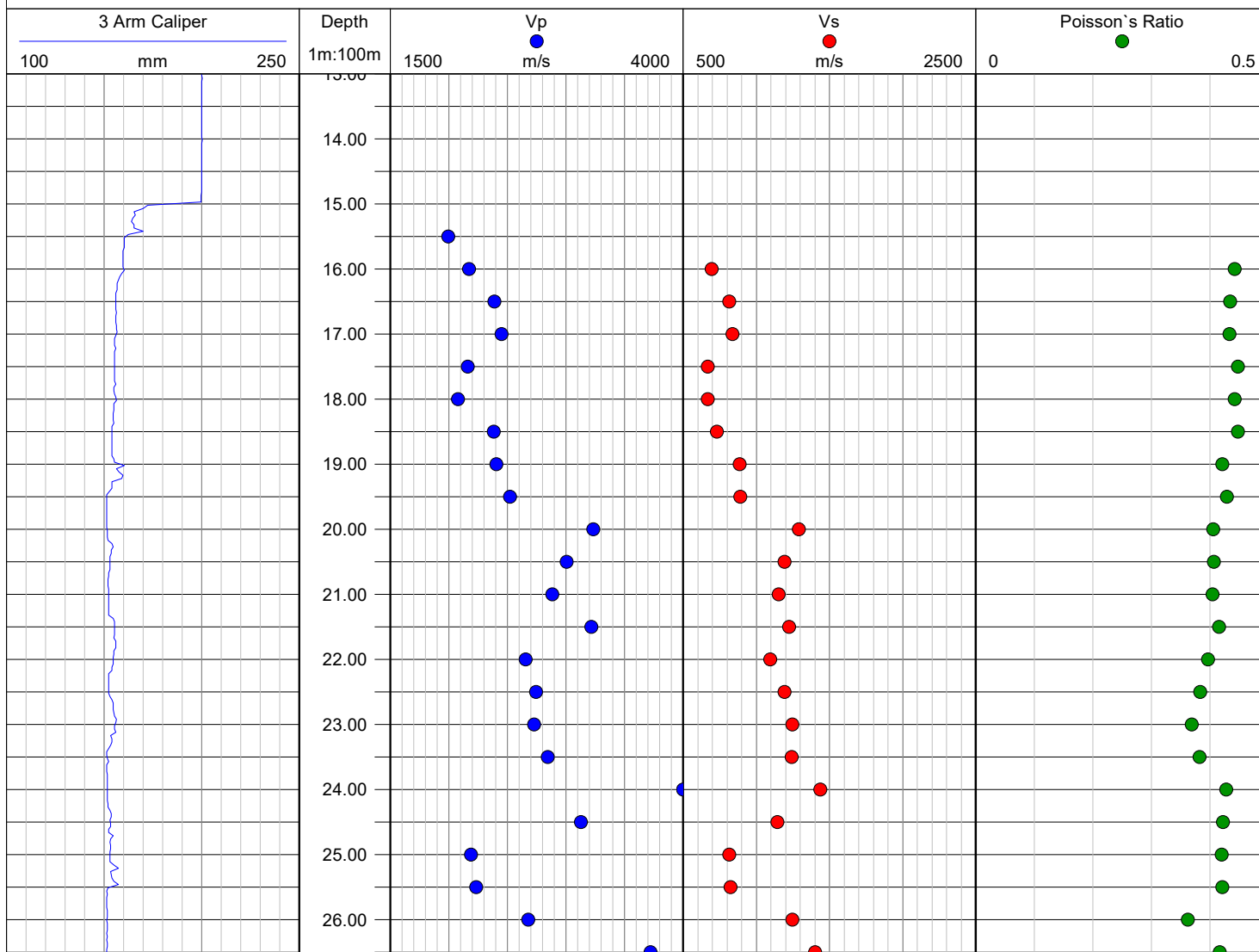
Logged Interval: 13.00 m - 41.50 m

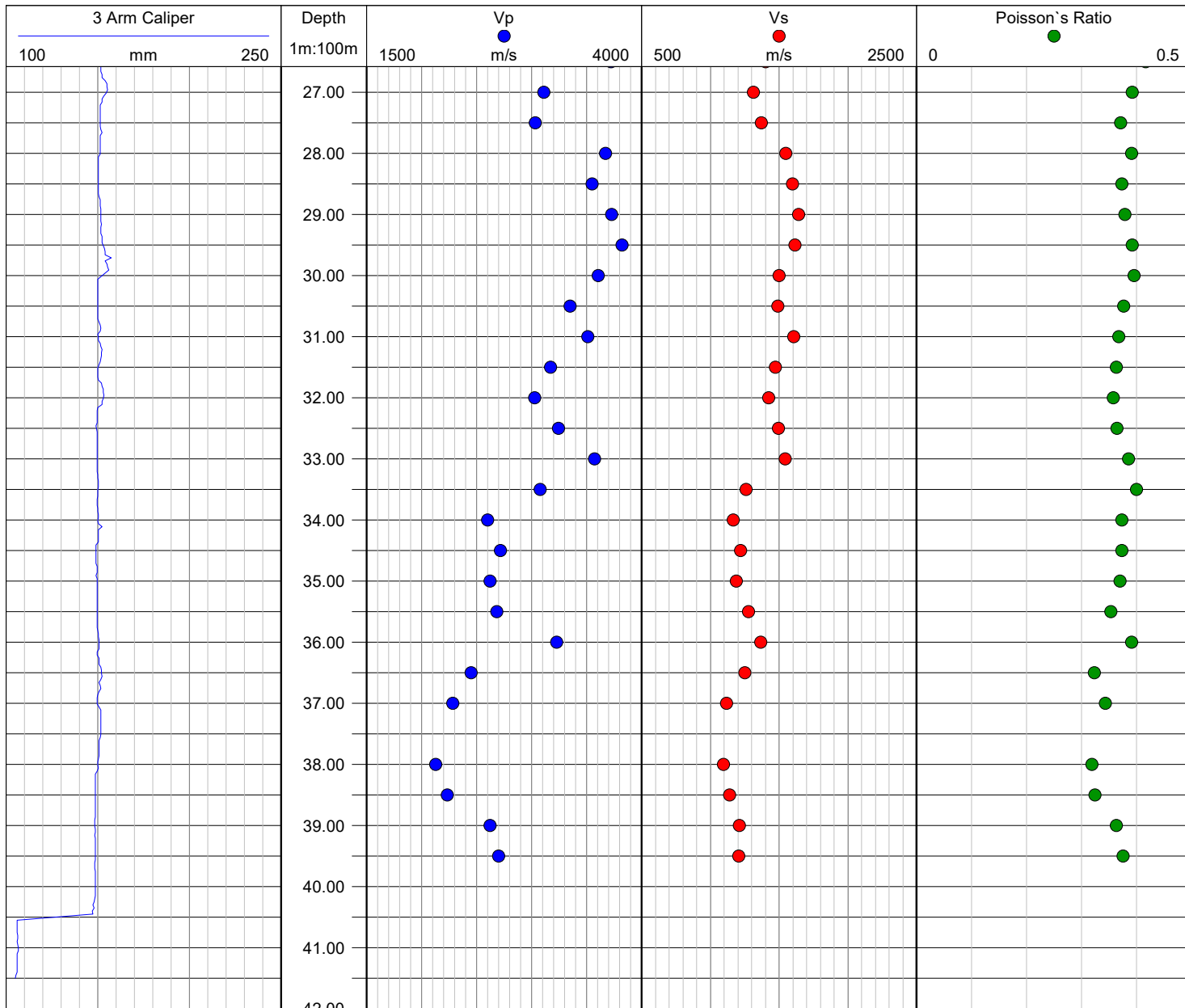
Fluid Level: 1.50 m

BOREHOLE RECORD (DRILLING)

CASING RECORD (DRILLING)

Bit Diameter:	From:	To:	Type:	Size:	From:	To:
203 mm	0.00 m	15.00 m	Steel	203 mm	0.00 m	15.00 m
146 mm	15.00 m	42.00 m				





MS-BH13 Velocity Table

*) wave arrival not detectable / velocity not calculable

Depth (m)	Vp (m/s)	Vs (m/s)	Vp/Vs ratio	Poisson`s ratio
15.00	1945	618	3.15	0.44
15.50	2367	691	3.43	0.45
16.00	2410	678	3.55	0.46
16.50	2295	754	3.04	0.44
17.00	2312	638	3.62	0.46
17.50	2174	788	2.76	0.42
18.00	2526	827	3.06	0.44
18.50	2526	746	3.39	0.45
19.00	2817	874	3.22	0.45
19.50	3479	1401	2.48	0.40
20.00	2872	1118	2.57	0.41
20.50	3024	1280	2.36	0.39
21.00	2956	1235	2.39	0.39
21.50	2715	1274	2.13	0.36
22.00	2505	1282	1.95	0.32
22.50	2752	1180	2.33	0.39
23.00	3468	1493	2.32	0.39
23.50	3261	1403	2.33	0.39
24.00	2479	971	2.55	0.41
24.50	2218	633	3.50	0.46
25.00	2449	1007	2.43	0.40
25.50	3015	1439	2.10	0.35
26.00	3038	1446	2.10	0.35
26.50	2956	1355	2.18	0.37
27.00	3015	1446	2.09	0.35
27.50	3243	1644	1.97	0.33
28.00	3352	1551	2.16	0.36
28.50	3101	1497	2.07	0.35
29.00	2871	1285	2.23	0.37
29.50	3046	1355	2.25	0.38
30.00	3077	1535	2.00	0.33
30.50	3109	1516	2.05	0.34
31.00	3158	1493	2.12	0.36
31.50	3200	1399	2.29	0.38
32.00	3297	1739	1.90	0.31
32.50	3093	1419	2.18	0.37
33.00	2480	1082	2.29	0.38
33.50	2444	1091	2.24	0.38
34.00	2521	1188	2.12	0.36
34.50	2615	1253	2.09	0.35
35.00	2878	1512	1.90	0.31
35.50	2892	1405	2.06	0.35
36.00	2615	1222	2.14	0.36



Depth (m)	Vp (m/s)	Vs (m/s)	Vp/Vs ratio	Poisson`s ratio
36.50	*)	1044	*)	*)
37.00	2367	945	2.50	0.41



WIRELINE GEOPHYSICAL LOG

Type: **3 Arm Caliper and P&S Logger Plot**

Client: SSE Generation Limited

Client Representative: n.s.

Logging Date:

Borehole: MS-BH13

Fugro Site Manager: Jessica Lewis

28/10/2022

Project No.: F212561

Project Title: Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation

Log Approved by: D. Gartner

Country: United Kingdom

Position: E: 482134.9, N: 411937.9

Grid Reference: OSGB

Elevation: 0.709 mOD

Borehole Depth (Drilling): 40.00 m

Recorded By: A. Wilson, M. Baron

Processed By: G. Whitehouse

Borehole Depth (Wireline): 41.50 m

Remarks:

Logging Datum: Ground Level

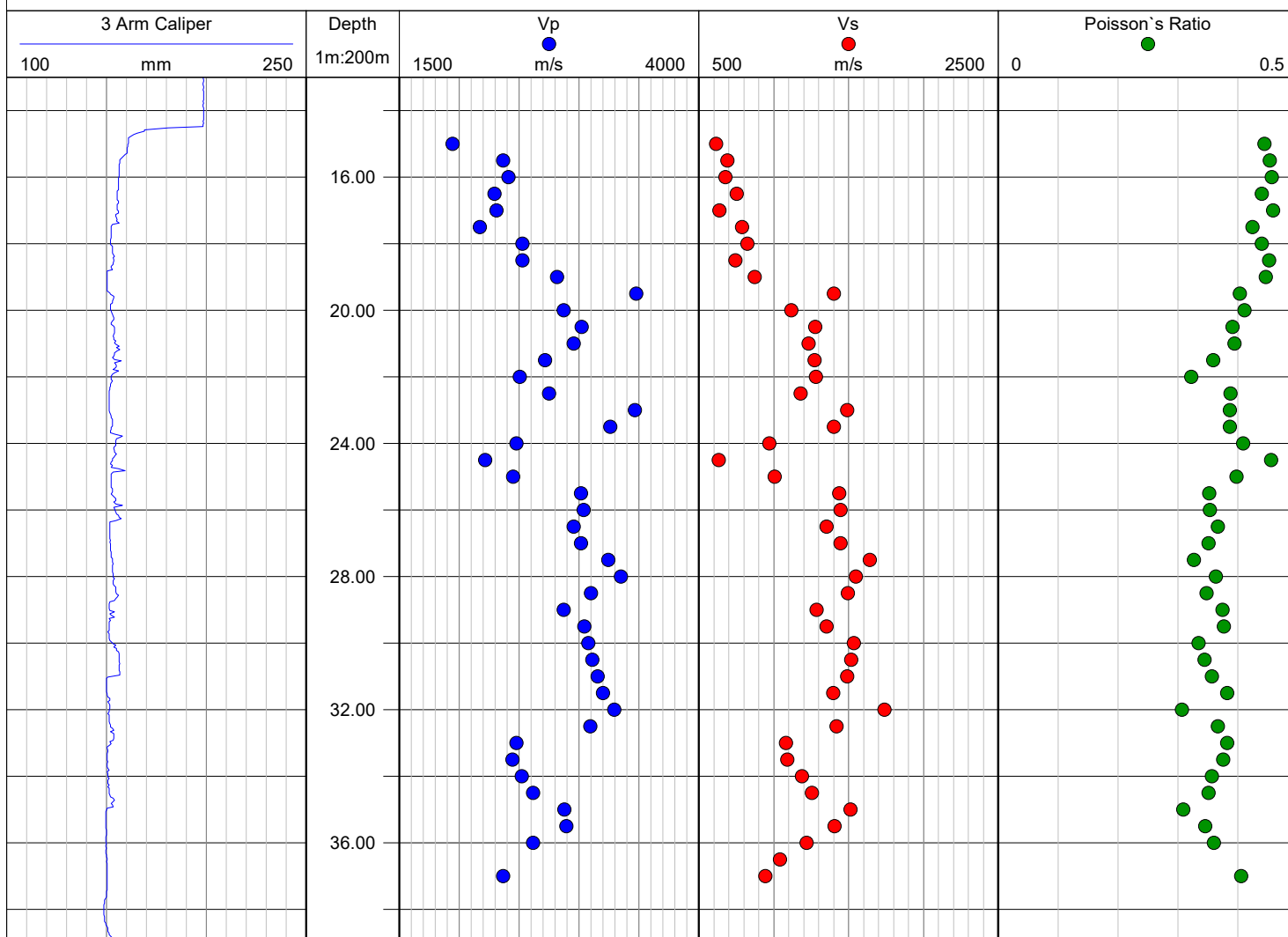
Logged Interval: 13.00 m - 38.96 m

Fluid Level: 0.00 m

BOREHOLE RECORD (DRILLING)

CASING RECORD (DRILLING)

Bit Diameter:	From:	To:	Type:	Size:	From:	To:
203 mm	0.00 m	15.00 m	Steel	203 mm	0.00 m	14.50 m
146 mm	15.00 m	42.00 m				



Appendix J

Monitoring Records

Appendix J Contents

- J.1 Guidance Notes
 - J.1.1 Guidance Notes on Ground Gas and Groundwater Monitoring and Sampling
- J.2 Record of Water Levels in Monitoring Installations
- J.3 Results of In Situ Measurements in Gas Monitoring Standpipes
- J.4 Water Sampling Records

J.1 Guidance Notes

Title	Reference
Guidance Notes on Ground Gas and Groundwater Monitoring and Sampling	J.1.1
x. Standard Protocols	J.1.1.1
y. Gas Monitoring	J.1.1.2
z. Gas Sampling	J.1.1.3
aa. Water Monitoring	J.1.1.4
bb. Water Sampling	J.1.1.5

J.1.1 Guidance Notes on Ground Gas and Groundwater Monitoring and Sampling

J.1.1.1 Standard Protocols

The following sections sets out the in-house procedures for monitoring and sampling ground gas and ground waters from monitoring installations. Any deviations from these procedures (Client specified procedures) or additional steps are set out in the report text or on the monitoring data sheets. Results and details of equipment used are presented on the relevant datasheets in the appropriate appendix for field test results. Unless detailed below, equipment is calibrated at regular intervals as specified by the manufacturer and calibration certificates can be supplied on request. Instrument limits of detection and reading accuracy are presented in the attached table and the readings presented on the data sheets should be read in conjunction with this information.

J.1.1.2 Gas Monitoring

In situ measurements of gas concentrations, gas emission flow-rate and in situ differential pressure in the standpipes are made, when gas monitoring is required, using the industry standard GA5000 or equivalent. The installations are fitted with a gas tap, which is closed between monitoring visits. Concentrations of carbon dioxide (CO₂), oxygen (O₂), carbon monoxide (CO), hydrogen sulphide (H₂S) and methane (CH₄) are measured as standard. Concentrations of volatile gases (VOC) can be measured, when required, using a photoionisation detector, calibrated on site against a standard reference gas (100 ppm iso-butylene in air).

Any gas monitoring is undertaken prior to any groundwater monitoring.

In line with CIRIA guidance, CH₄, CO₂ and O₂ gas concentrations are provided as both steady state and peak values to allow detailed interpretation of ground gas conditions. Steady state values are derived from readings at a frequency of 20 seconds over a period of 10 minutes, or a period of 3 minutes where steady state is reached within that time period. Otherwise, frequency of readings is as specified. Peak readings during the monitoring period, as well as time taken to reach steady state, are presented on the same data sheet.

Gas monitoring by recirculation may be required by the Specification. The gas standpipes for recirculation monitoring consist of a twin gas tap assembly with a suspended tube extending to approximately 1 m above the water level. Initially the differential pressure is recorded. Each gas tap is then monitored for in situ gas concentrations using the GA5000 and readings taken after 5 seconds, 30 seconds and 60 seconds. Gas recirculation is then undertaken using the inlet tube from the GA5000, which is attached to the top tap, whilst the outlet tube is attached to the tap with the suspended tube. Gas readings are taken at 1 minute intervals for 10 minutes or until 3 consecutive readings are within 10 % of each other. Finally, each gas tap is again monitored individually (5s, 30s and 60 seconds). Finally, the gas flow is measured for 10 minutes, or until gas flow is exhausted.

The groundwater level in the gas standpipes is measured following all forms of soil gas concentration monitoring. The recorded groundwater levels are given on the same summary tables as the gas monitoring results.

After monitoring the gas tap assembly is replaced, with valves in the closed position.

J.1.1.3 Gas Sampling

Samples of soil gas, if required, are collected from the gas standpipes immediately following the measurement of soil gas concentrations. The soil gas samples are collected using Tedlar gas sample bags which are filled by pumping gas from the standpipe using the pump function of the GA5000 gas analyser and the outlet tube. Tedlar bag valves are fully closed and sealed prior to detachment from the GA5000.

Alternatively, gas canisters may be used, such as Silonite™ or Summa. These are evacuated canisters, pre-prepared by the laboratory, so do not require a sampling pump for sample collection. These are also preferable for more extensive analysis such as low-level VOC analysis.

Following collection, gas samples are dispatched to a suitable analytical laboratory the same day.

J.1.1.4 Water Monitoring

Water levels were recorded in monitoring installations during and after fieldworks, as specified, using a dipmeter for single readings or datalogger for continuous monitoring.

J.1.1.5 Water Sampling

Monitoring wells are purged prior to water sampling, where required, by the removal of three well volumes of groundwater. A well volume is calculated from the height of the column of water in the standpipe (or for a sealed installation the thickness of the saturated zone surrounding the installation), the borehole diameter and the pipe diameter, taking account of the porosity of the gravel pack:

$$V = \pi \left(\frac{r_a}{1000} \right)^2 (h_3 - h_1) + \left[\pi \left(\frac{r_b}{1000} \right)^2 (h_3 - h_2) - \pi \left(\frac{r_a}{1000} \right)^2 (h_3 - h_2) \right] \phi 1000$$

Equation J.1

Where:

- h_1 = the depth to water in standpipe
- h_2 = the depth to top of water in response zone
- h_3 = the depth to base of standpipe
- r_a = the radius of pipe [mm]
- r_b = the radius of borehole [mm]
- ϕ = the porosity of pack (0.25)
- V = one well volume in litres

Purging is undertaken using a 12V peristaltic pump, an air-line compressor lift system or an inertial pumping system such as Waterra. The intake of the pump should ideally be placed within the screened section of the install.

Unless specified, groundwater samples are collected immediately after purging using the same pumping system as used for purging. Pre-purge and purged water samples can be collected on request.

Field measurements of pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Dissolved Oxygen (DO), Reduction-Oxidation (Redox) Potential and Temperature are made after purging each well volume, if required, and/or during sampling. All measurements are made with a multiparameter water quality probe and a flow cell system, attached to a suitable water pump, to reduce the disturbance of the sample and ensure the liquid is not exposed to air. Where purging is not undertaken, or where insufficient groundwater is present to allow for a full three well volumes of water to be purged, field measurements can be taken directly by submerging probes into a subsample of the disturbed sample. Instruments are calibrated prior to each use or each day, whichever is the lesser, against standard reference solutions.

Equipment is either cleaned thoroughly between uses in different boreholes or is dedicated to an individual standpipe to avoid cross-contamination.

As an alternative to purging three well volumes, low flow purging (micro purging) may be carried out, using the measurement of in situ parameters to establish when groundwater stability has occurred prior to taking the sample. Low flow sampling equipment includes bladder pumps, low flow inertial tubing or, if the water level is shallow, a peristaltic pumps. Details are included on the water sampling data sheets.

Sample handling (on-site filtration and preservation if required), storage and transportation arrangements are also detailed on the water sampling data sheets. In general, samples will be packed in insulated boxes, with frozen cold packs, and transported to the designated analytical laboratory in a timely manner.

Water sampling and purging often results in quantities of purged ground water which is initially held in plastic containers during the purging period. If the liquid is suspected to be heavily contaminated (based on smell and visual appearance) it will be stored in suitable intermediate containers on site whilst contamination categorisation is undertaken. Should a hazardous level of contamination be identified, a licensed disposal contractor will be employed to dispose of the wastewater according to current legislation at the Client's expense. All purged groundwater is disposed in accordance with the Site Waste Management Plan.

Where free product (LNAPL / DNAPL) is suspected or identified in groundwater monitoring wells, an interface probe is used to identify the depth and depth range of product. Where requested prior to monitoring, a sample of LNAPL product can be collected using a

hydrocarbon bailer which floats in water and sinks in light oil leaving a product sample within the bailer that also aids accurate identification of product depth.

J.1.1.6 Environmental Monitoring and testing equipment

The following instruments may be used during the site monitoring, as detailed in Table J.1.

Details of equipment used, and serial numbers (if applicable), are included on the relevant sampling data sheets.

Table J.1: Environmental Monitoring and Testing Equipment

Instrument	Parameter	Range	Accuracy
Infra-red Gas Analyser GA5000 Geotechnical Instruments	Methane	0 to 70 %	± 0.5 %
		70 to 100%	± 1.5 %
	Carbon Dioxide	0 to 60 %	± 0.5 %
		60 to 100%	± 1.5 %
	Oxygen	0 to 25 %	± 1.0 %
Hydrogen Sulphide	0 to 1000 ppm sensor	± 2.0 % FS	
Infra-red Gas Analyser GA2000 Geotechnical Instruments	Methane	0 to 5 % (LEL)	± 0.5 %
		5 to 15% (UEL)	± 1.0 %
		>15%	± 3.0 %
	Carbon Dioxide	0 to 5 %	± 0.5 %
		5 to 15%	± 1.0 %
>15%	± 3.0 %		
Oxygen	0 to 5 %	± 1.0 %	
5 to 15%	± 1.0 %		
15 to 25%	± 1.0 %		
Hydrogen Sulphide	0 to 200 ppm	± 10 %	
Carbon Monoxide	0 to 500 ppm	± 10 %	
Photoionization Detector PhoCheck Tiger (Intrinsically Safe)	Volatile organic compounds	0 to 20 000 ppm	±5% ± one digit
Photoionization Detector MiniRAE 3000 (Intrinsically Safe)	Volatile organic compounds	0 to 999.9 ppm 1000 to 15,000 ppm	Resolution: 0.1 ppm 1 ppm
Groundwater Inertial Pump (Waterra)	Development and purging of wells	5 to 25 L/min, depending on ground conditions	Not Applicable
Electronic Dipmeter	Water & Leachate Levels	Dependant on tape length	± 10 mm operator reading off tape
Oil/Water Interface Meter	Depths/thickness of floating (LNAPL) & sinking (DNAPL) product	Dependant on tape length	± 1 mm operator reading off tape

Instrument	Parameter	Range	Accuracy
YSI professional plus	pH	0 to 14	± 0.2 units
	Electrical Conductivity	0 to 200 mS/cm	±0.5% of reading or 0.001 mS/cm, whichever is greater
	Total Dissolved Solids	0 to 100 g/L	0.001 g/l
	Dissolved Oxygen (%)	0 to 200%	± 2% of reading or 2% air saturation, whichever is greater
		200 – 500%	± 6% of reading
	Redox//ORP (mV)	-1999 to +1999 mV	±20 mV in redox standards
Temperature	-5 to 70°C	± 0.1° C	

J.2 Record of Water Levels in Monitoring Installations

Title	Reference
Record of Water Levels in Monitoring Installations	Referenced by Location ID



Water Level Readings

Project Name		Keadby 3 Low Carbon Gas Power	
Project Reference		F212561	
Location ID		CP+RC	MS-BH01
Monitoring Point Reference		01	Pipe Type
Tip Depth [m]		10.00	Pipe Size [mm]
Datum		Cover Level	Datum to GL [m]
Response Zone Top [m]		7.00	Gas Tap
Response Zone Base [m]		10.00	Headworks
			Installation Date

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	10:03	CM		1.70	1.01	9.02	Development
2022-11-16	15:57	CM NR		1.73	1.04	7.92	Round 1
2022-11-24	14:07	CM		1.28	0.59	7.90	Round 2
2022-11-29	11:00	CM NR		1.20	0.51	7.89	Round 3
2022-12-05	12:07	CM		1.24	0.55	7.91	Round 4
2022-12-13	12:30	CM NR		1.19	0.50	7.90	Round 5
2022-12-19	15:14	CM		1.35	0.66	7.93	Round 6



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Monitoring Point Reference	01	
Tip Depth [m]	12.00	
Datum	Cover Level	Datum to GL [m] 0.55
Response Zone Top [m]	9.00	
Response Zone Base [m]	12.00	

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-18	14:46	CM		1.61	1.06	9.45	Development
2022-11-14	15:20	CM NR		1.43	0.88	9.13	Round 1
2022-11-24	13:59	CM		1.18	0.63	9.11	Round 2
2022-11-28	15:11	CM NR		1.13	0.58	9.10	Round 3
2022-12-05	12:01	CM		1.11	0.56	9.10	Round 4
2022-12-13	10:04	CM NR		1.12	0.57	9.12	Round 5
2022-12-19	15:03	CM		1.12	0.57	9.12	Round 6



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Monitoring Point Reference	01	
Tip Depth [m]	6.00	
Datum Cover Level	Datum to GL [m]	0.72
Response Zone Top [m]	3.00	
Response Zone Base [m]	6.00	

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-18	16:42	CM		1.87	1.15	6.87	Development
2022-11-16	13:58	CM NR		1.73	1.01	6.43	Round 1
2022-11-24	14:01	CM		1.38	0.66	6.41	Round 2
2022-11-29	12:46	CM NR		1.34	0.62	6.42	Round 3
2022-12-05	12:03	CM		1.33	0.61	6.42	Round 4
2022-12-13	10:51	CM NR		1.33	0.61	6.40	Round 5
2022-12-19	15:09	CM		1.36	0.64	6.42	Round 6



Water Level Readings

Project Name		Keadby 3 Low Carbon Gas Power			
Project Reference		F212561			
Location ID		CP+RC	MS-BH07		
Monitoring Point Reference			01	Pipe Type	Standpipe
Tip Depth [m]			12.50	Pipe Size [mm]	50
Datum	Cover Level	Datum to GL [m]		0.56	Gas Tap
Response Zone Top [m]			9.50	Headworks	Upstanding
Response Zone Base [m]			12.50	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-18	09:26	CM		1.62	1.06	12.73	Development
2022-11-17	14:50	CM NR		1.39	0.83	11.46	Round 1
2022-11-24	13:50	CM		1.23	0.67	11.45	Round 2
2022-12-01	09:15	CM NR		1.20	0.64	11.45	Round 3
2022-12-05	16:41	CM		1.17	0.61	11.43	Round 4
2022-12-14	09:12	CM NR		1.16	0.60	11.45	Round 5
2022-12-19	14:52	CM		1.17	0.61	11.46	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH09	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	9.00	Pipe Size [mm]	50
Datum	Cover Level	Datum to GL [m]	0.80
Gas Tap	Y		
Response Zone Top [m]	3.00	Headworks	Upstanding
Response Zone Base [m]	9.00	Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-18	12:33	CM		1.74	0.94	9.70	Development
2022-11-16	12:51	CM NR		1.54	0.74	9.58	Round 1
2022-11-24	13:54	CM		1.32	0.52	9.56	Round 2
2022-11-28	13:02	CM NR		1.28	0.48	9.55	Round 3
2022-12-05	11:57	CM		1.25	0.45	9.54	Round 4
2022-12-12	14:03	CM NR		1.24	0.44	9.56	Round 5
2022-12-19	14:57	CM		1.25	0.45	9.56	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power				
Project Reference	F212561				
Location ID	CP+RC	MS-BH10			
Monitoring Point Reference	01	Pipe Type	Standpipe		
Tip Depth [m]	10.00	Pipe Size [mm]	50		
Datum Cover Level		Datum to GL [m]	0.68	Gas Tap	Y
Response Zone Top [m]	7.00	Headworks	Upstanding		
Response Zone Base [m]	10.00	Installation Date			

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-08	15:17	CM NR		1.70	1.02	10.75	Development
2022-11-17	10:56	CM NR		1.64	0.96	10.41	Round 1
2022-11-24	14:15	CM		1.46	0.78	10.37	Round 2
2022-11-29	13:38	CM NR		1.40	0.72	10.37	Round 3
2022-12-05	12:12	CM		1.41	0.73	10.37	Round 4
2022-12-13	15:00	CM NR		1.41	0.73	10.37	Round 5
2022-12-19	15:24	CM		1.41	0.73	10.37	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH12	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	8.00	Pipe Size [mm]	50
Datum Cover Level		Datum to GL [m]	0.67
Response Zone Top [m]	5.00	Gas Tap	Y
Response Zone Base [m]	8.00	Headworks	Upstanding
		Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-09	09:30	CM NR		1.65	0.98	9.20	Development
2022-11-17	12:50	CM NR		1.56	0.89	8.88	Round 1
2022-11-24	14:18	CM		1.50	0.83	8.89	Round 2
2022-11-29	15:26	CM NR		1.28	0.61	8.89	Round 3
2022-12-05	12:14	CM		1.34	0.67	8.85	Round 4
2022-12-14	10:55	CM NR		1.36	0.69	8.86	Round 5
2022-12-19	15:27	CM		1.39	0.72	8.86	Round 6



Project Name	Keadby 3 Low Carbon Gas Power			Water Level Readings
Project Reference	F212561			
Location ID	CP+RC	MS-BH13		
Monitoring Point Reference	01	Pipe Type	Standpipe	
Tip Depth [m]	10.00	Pipe Size [mm]	50	
Datum	Cover Level	Datum to GL [m]	0.66	
Response Zone Top [m]	7.00	Gas Tap	Y	
Response Zone Base [m]	10.00	Headworks	Upstanding	
		Installation Date		

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-08	09:35	CM NR		1.44	0.78	9.25	Development
2022-11-17	11:56	CM NR		1.37	0.71	9.30	Round 1
2022-11-24	14:21	CM		1.20	0.54	9.31	Round 2
2022-11-29	14:27	CM NR		1.16	0.50	9.33	Round 3
2022-12-05	12:15	CM		1.14	0.48	9.33	Round 4
2022-12-14	11:50	CM NR		1.16	0.50	9.35	Round 5
2022-12-19	15:30	CM		1.17	0.51	9.36	Round 6



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Monitoring Point Reference	01	
Tip Depth [m]	6.00	
Datum <small>Cover Level</small>	Datum to GL [m]	0.76
Response Zone Top [m]	3.00	
Response Zone Base [m]	6.00	

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-08	11:24	CM NR		2.22	1.46	6.83	Development
2022-11-17	13:42	CM NR		1.97	1.21	6.35	Round 1
2022-11-24	13:46	CM		1.74	0.98	6.35	Round 2
2022-12-01	10:13	CM NR		1.69	0.93	6.34	Round 3
2022-12-05	11:52	CM		1.69	0.93	6.34	Round 4
2022-12-14	10:04	CM NR		1.65	0.89	6.35	Round 5
2022-12-19	14:48	CM		1.73	0.97	6.35	Round 6



Water Level Readings

Project Name		Keadby 3 Low Carbon Gas Power	
Project Reference		F212561	
Location ID	CP+RC	MS-BH19	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	6.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]		0.76
Response Zone Top [m]		3.00	
Response Zone Base [m]		6.00	
Gas Tap		Y	
Headworks		Upstanding	
Installation Date			

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-24	15:19	CM		1.89	1.13	5.35	Development
2022-11-14	14:15	CM NR		1.77	1.01	5.81	Round 1
2022-11-24	13:56	CM		1.51	0.75	5.51	Round 2
2022-11-28	14:10	CM NR		1.44	0.68	5.47	Round 3
2022-12-05	11:59	CM		1.46	0.70	5.30	Round 4
2022-12-13	09:04	CM NR		1.24	0.48	5.33	Round 5
2022-12-19	15:00	CM		1.45	0.69	5.16	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power				
Project Reference	F212561				
Location ID	CP+RC	MS-BH20			
Monitoring Point Reference	01	Pipe Type	Standpipe		
Tip Depth [m]	12.00	Pipe Size [mm]	50		
Datum	Cover Level	Datum to GL [m]	0.72	Gas Tap	Y
Response Zone Top [m]	9.00	Headworks	Upstanding		
Response Zone Base [m]	12.00	Installation Date			

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-19	13:01	CM		2.15	1.43	10.50	Development
2022-11-17	09:01	CM NR		1.92	1.20	8.35	Round 1
2022-11-24	14:07	CM		1.73	1.01	8.34	Round 2
2022-11-29	09:12	CM NR		1.67	0.95	8.33	Round 3
2022-12-05	12:09	CM		1.67	0.95	8.35	Round 4
2022-12-13	13:21	CM NR		1.68	0.96	8.33	Round 5
2022-12-19	15:18	CM		1.74	1.02	8.36	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH21	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	17.50	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.56	Gas Tap
Response Zone Top [m]	14.50	Headworks	Upstanding
Response Zone Base [m]	17.50	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	12:52	CM		1.50	0.94	17.01	Development
2022-11-16	15:08	CM NR		1.28	0.72	16.96	Round 1
2022-11-24	14:03	CM		1.44	0.88	17.22	Round 2
2022-11-29	11:55	CM NR		1.40	0.84	17.22	Round 3
2022-12-05	12:05	CM		1.36	0.80	17.23	Round 4
2022-12-13	11:40	CM NR		1.37	0.81	17.23	Round 5
2022-12-19	15:11	CM		1.39	0.83	17.23	Round 6



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH23	
Monitoring Point Reference	01		
Tip Depth [m]	6.00		
Datum	Cover Level	Datum to GL [m]	0.58
Response Zone Top [m]	1.00		
Response Zone Base [m]	6.00		

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-20	13:20	CM		2.12	1.54	5.17	Development
2022-11-17	15:46	CM NR		0.59	0.01	3.44	Round 1
2022-11-24	13:40	CM		0.84	0.26	3.44	Round 2
2022-12-01	10:59	CM		1.01	0.43	3.43	Round 3
2022-12-05	17:03	CM		0.98	0.40	3.43	Round 4
2022-12-14	12:55	CM		1.13	0.55	3.43	Round 5
2022-12-19	15:34	CM		0.95	0.37	3.43	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power			Pipe Type	Standpipe
Project Reference	F212561			Pipe Size [mm]	50
Location ID	CP+RC	MS-BH25		Gas Tap	Y
Monitoring Point Reference	01			Headworks	Flush
Tip Depth [m]	5.00			Installation Date	
Datum Cover Level	Datum to GL [m]		0.00		
Response Zone Top [m]	3.00				
Response Zone Base [m]	5.00				

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-21	09:07	CM		2.18	2.18	4.32	Development
2022-11-18	10:36	CM NR		1.54	1.54	3.24	Round 1
2022-11-24	14:28	CM		1.50	1.50	3.23	Round 2
2022-12-20	12:12	CM NR		1.56	1.56	3.23	Round 3
2022-12-05	11:42	CM		1.56	1.56	3.23	Round 4
2022-12-15	09:13	CM NR		1.62	1.62	3.23	Round 5
2022-12-19	15:37	CM		1.63	1.63	3.22	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP	BH101	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	21.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.65	
Response Zone Top [m]	18.00	Gas Tap	Y
Response Zone Base [m]	21.00	Headworks	Upstanding
		Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-27	10:28	CM		16.91	16.26	21.13	Development
2022-11-15	12:30	CM NR		16.67	16.02	20.34	Round 1
2022-11-24	14:49	CM		16.82	16.17	20.28	Round 2
2022-11-30	13:45	CM NR		16.90	16.25	20.22	Round 3
2022-12-05	12:27	CM		16.87	16.22	20.26	Round 4
2022-12-15	11:31	CM NR		16.84	16.19	20.27	Round 5
2022-12-19	14:03	CM		16.72	16.07	20.23	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP	BH102	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	30.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.72	Gas Tap
Response Zone Top [m]	18.00	Headworks	Upstanding
Response Zone Base [m]	30.00	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-26	11:21	CM		17.66	16.94	30.16	Development
2022-11-15	13:30	CM NR		17.44	16.72	29.98	Round 1
2022-11-24	14:51	CM		17.61	16.89	30.13	Round 2
2022-11-30	14:40	CM NR		17.30	16.58	28.83	Round 3
2022-12-05	12:28	CM		17.68	16.96	29.79	Round 4
2022-12-15	12:21	CM NR		17.11	16.39	29.70	Round 5
2022-12-19	14:07	CM		17.84	17.12	29.63	Round 6



Water Level Readings

Project Name		Keadby 3 Low Carbon Gas Power			
Project Reference		F212561			
Location ID		CP	BH104		
Monitoring Point Reference			01	Pipe Type	Standpipe
Tip Depth [m]			4.50	Pipe Size [mm]	50
Datum	Cover Level	Datum to GL [m]		0.55	Gas Tap
Response Zone Top [m]			4.50	Headworks	Upstanding
Response Zone Base [m]			9.00	Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-27	14:52	CM		7.12	6.57	9.20	Development
2022-11-15	15:42	CM NR		7.02	6.47	8.70	Round 1
2022-11-24	14:34	CM		6.88	6.33	8.62	Round 2
2022-11-30	12:44	CM NR		6.78	6.23	8.64	Round 3
2022-12-05	12:41	CM		6.71	6.16	8.60	Round 4
2022-12-15	14:06	CM NR		6.66	6.11	8.54	Round 5
2022-12-19	14:25	CM		6.63	6.08	8.54	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power			Pipe Type	Standpipe
Project Reference	F212561			Pipe Size [mm]	50
Location ID	CP	BH106		Gas Tap	Y
Monitoring Point Reference	01			Headworks	Upstanding
Tip Depth [m]	5.50			Installation Date	
Datum Cover Level		Datum to GL [m]	0.56		
Response Zone Top [m]	1.00				
Response Zone Base [m]	5.50				

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-07	14:55	CM	✓			6.11	Development
2022-11-15	12:03	CM	✓			6.11	Round 1
2022-11-24	14:38	CM	✓			6.12	Round 2
2022-12-01	10:37	CM	✓			6.12	Round 3
2022-12-05	12:39	CM	✓			6.12	Round 4
2022-12-16	09:21	CM	✓			6.12	Round 5
2022-12-19	14:29	CM	✓			6.12	Round 6



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	WLS	DS101
Monitoring Point Reference	01	
Tip Depth [m]	5.00	
Datum	Cover Level	Datum to GL [m] 0.70
Response Zone Top [m]	0.50	
Response Zone Base [m]	5.00	

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-07	14:40	CM NR	✓			5.80	Development
2022-11-15	11:53	CM NR	✓			5.81	Round 1
2022-11-24	14:40	CM	✓			5.80	Round 2
2022-12-02	10:26	CM NR	✓			5.81	Round 3
2022-12-05	12:37	CM	✓			5.80	Round 4
2022-12-16	09:11	CM NR	✓			5.81	Round 5
2022-12-19	14:33	CM	✓			5.80	Round 6



Water Level Readings

Project Name		Keadby 3 Low Carbon Gas Power	
Project Reference		F212561	
Location ID		WLS	DS103
Monitoring Point Reference		01	Pipe Type Standpipe
Tip Depth [m]		0.00	Pipe Size [mm] 50
Datum Cover Level	Datum to GL [m]	0.48	Gas Tap Y
Response Zone Top [m]		0.50	Headworks Upstanding
Response Zone Base [m]		5.00	Installation Date

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	09:00	CM	✓			5.50	Development
2022-11-15	11:42	CM	✓			5.50	Round 1
2022-11-24	14:58	CM	✓			5.50	Round 2
2022-12-02	10:49	CM	✓			5.50	Round 3
2022-12-05	12:30	CM	✓			5.50	Round 4
2022-12-20	09:32	CM	✓			5.50	Round 5
2022-12-19	14:12	CM	✓			5.50	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	WLS	DS105	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	5.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.55	Gas Tap Y
Response Zone Top [m]	0.50	Headworks	Upstanding
Response Zone Base [m]	5.00	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	09:03	CM	✓			5.54	Development
2022-11-15	11:12	CM NR	✓			5.54	Round 1
2022-11-24	14:45	CM	✓			5.54	Round 2
2022-12-02	11:18	CM NR	✓			5.54	Round 3
2022-12-05	12:34	CM	✓			5.54	Round 4
2022-12-16	10:01	CM NR	✓			5.54	Round 5
2022-12-19	14:18	CM	✓			5.54	Round 6



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	WLS	DS108
Monitoring Point Reference	01	
Tip Depth [m]	5.00	
Datum	Cover Level	Datum to GL [m] 0.56
Response Zone Top [m]	0.50	
Response Zone Base [m]	5.00	

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	09:12	CM	✓			5.53	Development
2022-11-15	11:30	CM NR	✓			5.53	Round 1
2022-11-24	15:00	CM	✓			5.53	Round 2
2022-12-02	10:55	CM NR	✓			5.53	Round 3
2022-12-05	12:32	CM	✓			5.53	Round 4
2022-12-16	09:41	CM NR	✓			5.53	Round 5
2022-12-19	14:13	CM	✓			5.53	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	WLS	DS109	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	5.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.56	Gas Tap
Response Zone Top [m]	0.50	Headworks	Upstanding
Response Zone Base [m]	5.00	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	09:12	CM	✓			5.48	Development
2022-11-15	10:48	CM NR	✓			5.48	Round 1
2022-11-24	15:03	CM	✓			5.47	Round 2
2022-12-02	11:38	CM NR	✓			5.47	Round 3
2022-12-05	12:25	CM	✓			5.47	Round 4
2022-12-16	10:19	CM NR	✓			5.48	Round 5
2022-12-19	13:58	CM	✓			5.47	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power			Pipe Type	Standpipe
Project Reference	F212561			Pipe Size [mm]	50
Location ID	WLS	DS110			
Monitoring Point Reference	01			Gas Tap	Y
Tip Depth [m]	5.00			Headworks	Upstanding
Datum Cover Level	Datum to GL [m]	0.60			Installation Date
Response Zone Top [m]	0.50				
Response Zone Base [m]	5.00				

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-10-25	09:18	CM	✓			5.54	Development
2022-11-15	10:35	CM NR	✓			5.54	Round 1
2022-11-24	15:05	CM	✓			5.54	Round 2
2022-12-02	11:50	CM NR	✓			5.53	Round 3
2022-12-05	12:24	CM	✓			5.52	Round 4
2022-12-16	10:30	CM NR	✓			5.54	Round 5
2022-12-19	13:55	CM	✓			5.52	Round 6



Water Level Readings

Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	AR-BH02	
Monitoring Point Reference	01	Pipe Type	Standpipe
Tip Depth [m]	10.00	Pipe Size [mm]	50
Datum Cover Level	Datum to GL [m]	0.62	Gas Tap Y
Response Zone Top [m]	7.00	Headworks	Upstanding
Response Zone Base [m]	10.00	Installation Date	

READINGS							
Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-10	09:30	CM NR		2.16	1.54	10.51	Development
2022-11-16	10:20	CM NR		2.15	1.53	10.44	Round 1
2022-11-24	15:20	CM		1.92	1.30	10.44	Round 2
2022-12-01	13:16	CM NR		1.83	1.21	10.44	Round 3
2022-12-05	12:47	CM		1.78	1.16	10.41	Round 4
2022-12-14	14:00	CM NR		1.85	1.23	10.44	Round 5
2022-12-19	15:48	CM		1.89	1.27	10.42	Round 6



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP	HR-BH01	
Monitoring Point Reference	01		
Tip Depth [m]	5.00		
Datum	Cover Level	Datum to GL [m]	0.65
Response Zone Top [m]	2.00		
Response Zone Base [m]	5.00		

Water Level Readings

Pipe Type	Standpipe
Pipe Size [mm]	50
Gas Tap	Y
Headworks	Upstanding
Installation Date	

READINGS

Date	Time	Operator	Level			Depth to Base [m]	Remarks
			Dry	[m BD]	[m GL]		
2022-11-09	15:40	CM NR		2.25	1.60	5.61	Development
2022-11-18	08:56	CM NR		2.02	1.37	5.57	Round 1
2022-11-24	15:37	CM		2.06	1.41	5.56	Round 2
2022-12-01	15:10	CM NR		2.14	1.49	5.56	Round 3
2022-12-05	13:09	CM		2.18	1.53	5.56	Round 4
2022-12-15	15:08	CM NR		2.25	1.60	5.57	Round 5
2022-12-19	16:10	CM		2.24	1.59	5.56	Round 6

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J.3 Results of In Situ Measurements in Gas Monitoring Standpipes

Title	Reference
Results of In Situ Measurements in Gas Monitoring Standpipes	Referenced by Location ID



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	11:00
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.69
Depth to Water [m BD]	1.20
Depth to Water [m BGL]	0.51
Depth to Base [m]	7.89

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.4
Steady State Value	1.4
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.6
Steady State Value	20.6
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.3	21	77.7
40	0	0	1.4	20.6	78
60	0	0	1.4	20.6	78
80	0	0	1.4	20.6	78
100	0	0	1.4	20.6	78
120	0	0	1.4	20.6	78
150		0	1.4	20.6	78
180		0	1.4	20.6	78

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Monday 2022-11-14	15:20
Weather	Foggy, Drizzle, Damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.00
Atmospheric Pressure [mbar]	1005
Differential Pressure [mbar]	-0.10
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	1.43
Depth to Water [m BGL]	0.88
Depth to Base [m]	9.13

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.6
Steady State Value	1.2
Calculated time to steady state	120
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	20.2
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	-0.1	0	2.6	20.1	77.9
40	0	0	2	19.7	78.3
60	0	0	1.5	20	78.5
80	0	0	1.4	20.1	78.5
100	0	0	1.3	20.2	78.5
120	0	0	1.2	20.2	78.5
150		0	1.2	20.2	78.5
180		0	1.2	20.2	78.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Monday 2022-11-28	15:11
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.00
Atmospheric Pressure [mbar]	1008
Differential Pressure [mbar]	-0.13
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	1.13
Depth to Water [m BGL]	0.58
Depth to Base [m]	9.10

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.7
Steady State Value	2.6
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	20.2
Steady State Value	20.2
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.6	20.2	77.2
40	0	0	2.7	20.2	77.1
60	0	0	2.6	20.2	77.1
80	0	0	2.6	20.2	77.2
100	0	0	2.6	20.2	77.2
120	0	0	2.6	20.2	77.2
150		0	2.6	20.2	77.2
180		0	2.6	20.2	77.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	10:04
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.00
Atmospheric Pressure [mbar]	1010
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	1.12
Depth to Water [m BGL]	0.57
Depth to Base [m]	9.12

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.1
Steady State Value	0.0
Calculated time to steady state	60
	CO2 [%v/v]
Peak Value	4.4
Steady State Value	4.4
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.5
Steady State Value	20.5
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0.1	4.4	20.8	74.7
40	0	0.1	4.4	20.5	74.9
60	0	0.1	4.4	20.5	74.9
80	0	0	4.4	20.5	74.9
100	0	0	4.4	20.5	74.9
120	0	0	4.4	20.5	74.9
150		0	4.4	20.5	74.9
180					

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH03
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	09:59
Weather	Overcast, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	977
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.66
Depth to Water [m BD]	1.83
Depth to Water [m BGL]	1.17
Depth to Base [m]	4.97

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.6
Steady State Value	1.6
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.2
Steady State Value	20.2
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.6	20.8	77.8
40	0	0	1.6	20.2	78.2
60	0	0	1.6	20.2	78.2
80	0	0	1.6	20.2	78.2
100	0	0	1.6	20.2	78.2
120	0	0	1.6	20.2	78.2
150		0	1.6	20.2	78.2
180		0	1.6	20.2	78.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	10:06
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.04
Datum	Cover Level
Datum to GL [m]	0.66
Depth to Water [m BD]	1.40
Depth to Water [m BGL]	0.74
Depth to Base [m]	4.96

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.4
Steady State Value	1.4
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.6
Steady State Value	20.6
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.4	20.8	77.8
40	0	0	1.4	20.7	77.9
60	0	0	1.4	20.6	78
80	0	0	1.4	20.6	78
100	0	0	1.4	20.6	78
120	0	0	1.4	20.6	78
150		0	1.4	20.6	78
180		0	1.4	20.6	78

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	14:08
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1008
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.66
Depth to Water [m BD]	1.38
Depth to Water [m BGL]	0.72
Depth to Base [m]	4.96

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.6
Steady State Value	1.6
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.9
Steady State Value	20.9
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.6	21.4	77
40	0	0	1.6	21	77.4
60	0	0	1.6	20.9	77.5
80	0	0	1.6	20.9	77.5
100	0	0	1.6	20.9	77.5
120	0	0	1.6	20.9	77.5
150		0	1.6	20.9	77.5
180		0	1.6	20.9	77.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP MS-BH05
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Wednesday 2022-11-16	13:58
Weather	Overcast, damp	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.11
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	1.63
Depth to Water [m BGL]	0.91
Depth to Base [m]	6.42

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.3
Steady State Value	1.3
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.5
Steady State Value	19.5
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.3	20.2	78.5
40	0	0	1.3	19.6	79.1
60	0	0	1.3	19.5	79.1
80	0	0	1.3	19.5	79.1
100	0	0	1.3	19.5	79.1
120	0	0	1.3	19.5	79.1
150		0	1.3	19.5	79.1
180		0	1.3	19.5	79.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	10:51
Weather	Sunny, Frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1010
Differential Pressure [mbar]	0.12
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	1.33
Depth to Water [m BGL]	0.61
Depth to Base [m]	6.40

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.9
Steady State Value	1.9
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	21.2
Steady State Value	21.2
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.9	21.8	79.9
40	0	0	1.9	21.2	76.8
60	0	0	1.9	21.2	76.9
80	0	0	1.9	21.2	76.9
100	0	0	1.9	21.2	76.9
120	0	0	1.9	21.2	76.9
150		0	1.9	21.2	76.9
180		0	1.9	21.2	76.9

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	14:50
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	980
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	1.39
Depth to Water [m BGL]	0.83
Depth to Base [m]	11.45

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	3
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.6
Steady State Value	3.6
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	16.6
Steady State Value	16.6
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.5	18.6	75.2
40	0	0	3.5	16.8	79.6
60	0	0	3.5	16.7	79.7
80	0	0	3.6	16.6	79.7
100	0	0	3.6	16.6	79.7
120	0	0	3.6	16.6	79.7
150		0	3.6	16.6	79.7
180		0	3.6	16.6	79.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Thursday 2022-12-01	09:15
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.50
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	4.30
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	1.20
Depth to Water [m BGL]	0.64
Depth to Base [m]	11.45

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	1.9
Steady State Value	0.7
Calculated time to steady state	240
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.4
Steady State Value	5.4
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	18.2
Steady State Value	18.2
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	1.9	0	5.3	19.2	75.5
40	1.7	0	5.4	18.3	76.3
60	1.5	0	5.4	18.2	76.4
80	1.3	0	5.4	18.2	76.4
100	1.1	0	5.4	18.2	76.4
120	1	0	5.4	18.2	76.4
150	0.9	0	5.4	18.2	76.4
180	0.8	0	5.4	18.2	76.4
210	0.8				
240	0.7				
270	0.7				
300	0.7				

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	09:12
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.50
Atmospheric Pressure [mbar]	1003
Differential Pressure [mbar]	5.37
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	1.16
Depth to Water [m BGL]	0.60
Depth to Base [m]	11.45

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	6
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	2.1
Steady State Value	1.8
Calculated time to steady state	100
	Methane [%v/v]
Peak Value	0.2
Steady State Value	0.2
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.6
Steady State Value	5.6
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	18.5
Steady State Value	18.5
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	2.1	0.2	5.6	20.7	73.7
40	2	0.2	5.6	19.3	75.1
60	1.9	0.2	5.6	18.6	75.6
80	1.9	0.2	5.6	18.5	75.7
100	1.8	0.2	5.6	18.5	75.7
120	1.8	0.2	5.6	18.5	75.7
150	1.8	0.2	5.6	18.5	75.7
180		0.2	5.6	18.5	75.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH09
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Wednesday 2022-11-16	12:51
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.

If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.1
Datum	Cover Level
Datum to GL [m]	0.80
Depth to Water [m BD]	1.54
Depth to Water [m BGL]	0.74
Depth to Base [m]	9.58

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	5
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.4
Steady State Value	1.4
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.4
Steady State Value	20.4
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.4	20.8	78.2
40	0	0	1.4	20.4	78.2
60	0	0	1.4	20.4	78.2
80	0	0	1.4	20.4	78.2
100	0	0	1.4	20.4	78.2
120	0	0	1.4	20.4	78.2
150		0	1.4	20.4	78.2
180		0	1.4	20.4	78.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH09
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Monday 2022-11-28	13:02
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	9.00
Atmospheric Pressure [mbar]	1007
Differential Pressure [mbar]	0.03
Datum	Cover Level
Datum to GL [m]	0.80
Depth to Water [m BD]	1.28
Depth to Water [m BGL]	0.48
Depth to Base [m]	9.55

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	4
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.5
Steady State Value	3.5
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.5
Steady State Value	19.5
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.5	20.5	78
40	0	0	3.5	19.5	77
60	0	0	3.5	19.5	77
80	0	0	3.5	19.5	77
100	0	0	3.5	19.5	77
120	0	0	3.5	19.5	77
150		0	3.5	19.5	77
180		0	3.5	19.5	77

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH09
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	5
Date/Time	Monday 2022-12-12 14:03
Weather	Foggy, frozen.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	9.00
Atmospheric Pressure [mbar]	1007
Differential Pressure [mbar]	-0.03
Datum	Cover Level
Datum to GL [m]	0.80
Depth to Water [m BD]	1.24
Depth to Water [m BGL]	0.44
Depth to Base [m]	9.56

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	2
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	4.3
Steady State Value	4.3
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	19.6
Steady State Value	19.6
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	4.5	20.2	75.3
40	0	0	4.4	19.8	75.8
60	0	0	4.3	19.6	76
80	0	0	4.3	19.6	76
100	0	0	4.3	19.6	76.1
120	0	0	4.3	19.6	76.1
150		0	4.3	19.6	76.1
180		0	4.3	19.6	76.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH10
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	10:56
Weather	Light rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	978
Differential Pressure [mbar]	-0.04
Datum	Cover Level
Datum to GL [m]	0.68
Depth to Water [m BD]	1.64
Depth to Water [m BGL]	0.96
Depth to Base [m]	10.41

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H ₂ S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO ₂ [%v/v]
Peak Value	0.5
Steady State Value	0.4
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.5
Steady State Value	20.5
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO ₂ [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.5	20.5	79
40	0	0	0.4	20.5	79.1
60	0	0	0.4	20.5	79.1
80	0	0	0.4	20.5	79.1
100	0	0	0.4	20.5	79.1
120	0	0	0.4	20.5	79.1
150		0	0.4	20.5	79.1
180		0	0.4	20.5	79.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	13:38
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.00
Datum	Cover Level
Datum to GL [m]	0.68
Depth to Water [m BD]	1.40
Depth to Water [m BGL]	0.72
Depth to Base [m]	10.37

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.2
Steady State Value	20.2
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.8	20.5	78.6
40	0	0	0.8	20.2	79
60	0	0	0.8	20.2	79
80	0	0	0.8	20.2	79
100	0	0	0.8	20.2	79
120	0	0	0.8	20.2	79
150		0	0.8	20.2	79
180		0	0.8	20.2	79

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	15:00
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1008
Differential Pressure [mbar]	-0.02
Datum	Cover Level
Datum to GL [m]	0.68
Depth to Water [m BD]	1.41
Depth to Water [m BGL]	0.73
Depth to Base [m]	10.37

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.1
Steady State Value	1.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.1
Steady State Value	20.1
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.1	21.1	77.8
40	0	0	1.1	20.1	78.8
60	0	0	1.1	20.1	78.8
80	0	0	1.1	20.1	78.8
100	0	0	1.1	20.1	78.8
120	0	0	1.2	20.1	78.8
150		0	1.1	20.1	78.8
180		0	1.1	20.1	78.8

REMARKS

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Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	15:26
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	8.00
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.02
Datum	Cover Level
Datum to GL [m]	0.67
Depth to Water [m BD]	1.28
Depth to Water [m BGL]	0.61
Depth to Base [m]	8.89

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.9
Steady State Value	0.8
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.7
Steady State Value	20.7
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.9	20.9	78.2
40	0	0	0.8	20.8	78.4
60	0	0	0.8	20.7	78.5
80	0	0	0.8	20.7	78.5
100	0	0	0.8	20.7	78.5
120	0	0	0.8	20.7	78.5
150		0	0.8	20.7	78.5
180		0	0.8	20.7	78.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	10:55
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	8.00
Atmospheric Pressure [mbar]	1003
Differential Pressure [mbar]	-0.11
Datum	Cover Level
Datum to GL [m]	0.67
Depth to Water [m BD]	1.36
Depth to Water [m BGL]	0.69
Depth to Base [m]	8.86

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.5
Steady State Value	1.5
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	19.7
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.5	20.8	77.7
40	0	0	1.5	20.1	78.4
60	0	0	1.5	19.8	78.7
80	0	0	1.5	19.7	78.8
100	0	0	1.5	19.7	78.8
120	0	0	1.5	19.7	78.8
150		0	1.5	19.7	78.8
180		0	1.5	19.7	78.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH13
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	11:54
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	979
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.66
Depth to Water [m BD]	1.37
Depth to Water [m BGL]	0.71
Depth to Base [m]	9.30

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.5
Steady State Value	0.5
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.3
Steady State Value	20.3
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.5	20.6	78.9
40	0	0	0.5	20.4	79.1
60	0	0	0.5	20.3	79.2
80	0	0	0.5	20.3	79.2
100	0	0	0.5	20.3	79.2
120	0	0	0.5	20.3	79.2
150		0	0.5	20.3	79.2
180		0	0.5	20.3	79.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH13
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	3
Date/Time	Tuesday 2022-11-29 14:27
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1010
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.66
Depth to Water [m BD]	1.16
Depth to Water [m BGL]	0.50
Depth to Base [m]	9.33

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.0
Steady State Value	0.5
Calculated time to steady state	120
	Oxygen [%v/v]
Peak Value	19.5
Steady State Value	20.5
Calculated time to steady state	120

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1	21	78
40	0	0	1	19.5	79.5
60	0	0	0.8	19.7	79.5
80	0	0	0.7	19.9	79.4
100	0	0	0.6	19.9	79.3
120	0	0	0.5	20	79.5
150		0	0.5	20	79.5
180		0	0.5	20	79.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH17
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	13:42
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	979
Differential Pressure [mbar]	-0.06
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.97
Depth to Water [m BGL]	1.21
Depth to Base [m]	6.35

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.1
Steady State Value	0.1
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	17.6
Steady State Value	17.6
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0.1	0.8	18.8	80.5
40	0	0.1	0.8	17.7	81.5
60	0	0.1	0.8	17.6	81.5
80	0	0.1	0.8	17.6	81.5
100	0	0.1	0.8	17.6	81.5
120	0	0.1	0.8	17.6	81.5
150		0.1	0.8	17.6	81.5
180		0.1	0.8	17.6	81.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Thursday 2022-12-01	10:13
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	-0.22
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.69
Depth to Water [m BGL]	0.93
Depth to Base [m]	6.34

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	-0.1
Steady State Value	0
Calculated time to steady state	60
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.9
Steady State Value	1.9
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	19.3
Steady State Value	19.3
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	-0.1	0	1.8	20.3	77.9
40	-0.1	0	1.9	19.4	78.7
60	0	0	1.9	19.3	78.6
80	0	0	1.9	19.3	78.6
100	0	0	1.9	19.3	78.6
120	0	0	1.9	19.3	78.6
150		0	1.9	19.3	78.6
180		0	1.9	19.3	78.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	10:04
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1003
Differential Pressure [mbar]	0.42
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.65
Depth to Water [m BGL]	0.89
Depth to Base [m]	6.35

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0.2
Steady State Value	0
Calculated time to steady state	60
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.5
Steady State Value	1.3
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.3
Steady State Value	20.3
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0.2	0	1.5	20.7	77.8
40	0.1	0	1.3	20.3	78.4
60	0	0	1.3	20.3	78.4
80	0	0	1.3	20.3	78.4
100	0	0	1.3	20.3	78.4
120	0	0	1.3	20.3	78.4
150		0	1.3	20.3	78.4
180		0	1.3	20.3	78.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	MS-BH19
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Monday 2022-11-14	14:15
Weather	Foggy, moist, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.

If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	1006
Differential Pressure [mbar]	-0.03
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.77
Depth to Water [m BGL]	1.01
Depth to Base [m]	5.81

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H ₂ S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO ₂ [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.6
Steady State Value	20.6
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO ₂ [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.9	20.6	78.7
40	0	0	0.8	20.6	78.6
60	0	0	0.8	20.6	78.6
80	0	0	0.8	20.6	78.6
100	0	0	0.8	20.6	78.6
120	0	0	0.8	20.6	78.6
150		0	0.8	20.6	78.6
180		0	0.8	20.6	78.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Monday 2022-11-28	14:10
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1007
Differential Pressure [mbar]	0.20
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.44
Depth to Water [m BGL]	0.68
Depth to Base [m]	5.47

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.2
Steady State Value	2.1
Calculated time to steady state	150
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	20
Calculated time to steady state	120

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.2	20.4	76.4
40	0	0	3.2	19.7	77.1
60	0	0	2.8	19.8	77.4
80	0	0	2.6	19.9	77.5
100	0	0	2.4	19.9	77.7
120	0	0	2.2	20	77.8
150		0	2.1	20	77.9
180		0	2.1	20	77.9
210		0	2.1	20	77.9

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH19
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	5
Date/Time	Tuesday 2022-12-13 09:04
Weather	Foggy, frozen.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1010
Differential Pressure [mbar]	-0.09
Datum	Cover Level
Datum to GL [m]	0.76
Depth to Water [m BD]	1.24
Depth to Water [m BGL]	0.48
Depth to Base [m]	5.33

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.8
Steady State Value	3.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.3
Steady State Value	20.3
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.8	20.6	75.5
40	0	0	3.8	20.3	75.9
60	0	0	3.8	20.3	75.9
80	0	0	3.8	20.3	75.9
100	0	0	3.8	20.3	75.9
120	0	0	3.8	20.3	75.9
150		0	3.8	20.3	75.9
180		0	3.8	20.3	75.9

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP	MS-BH20	
Operator	NR CM		
Skills Card			

Steady State Gas Monitoring Record

Monitoring Round	1		
Date/Time	Thursday 2022-11-17	09:01	
Weather	Rain, wet.		

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	977
Differential Pressure [mbar]	0.03
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	1.92
Depth to Water [m BGL]	1.20
Depth to Base [m]	8.35

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.3
Steady State Value	0.3
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.9
Steady State Value	20.9
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.3	20.9	78.8
40	0	0	0.3	20.9	78.8
60	0	0	0.3	20.9	78.8
80	0	0	0.3	20.9	78.8
100	0	0	0.3	20.9	78.8
120	0	0	0.3	20.9	78.8
150		0	0.3	20.9	78.8
180		0	0.3	20.9	78.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	09:12
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.00
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	1.67
Depth to Water [m BGL]	0.95
Depth to Base [m]	8.33

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.5
Steady State Value	0.5
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.9
Steady State Value	20.9
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.4	21	78.6
40	0	0	0.5	21	78.5
60	0	0	0.5	20.9	78.4
80	0	0	0.5	20.9	78.4
100	0	0	0.5	20.9	78.4
120	0	0	0.5	20.9	78.4
150		0	0.5	20.9	78.4
180		0	0.5	20.9	78.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	13:21
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	12.00
Atmospheric Pressure [mbar]	1009
Differential Pressure [mbar]	-0.14
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	1.68
Depth to Water [m BGL]	0.96
Depth to Base [m]	8.33

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	9
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.6
Steady State Value	0.3
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	20.9
Steady State Value	21.1
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.6	21	78.4
40	0	0	0.5	20.9	78.4
60	0	0	0.4	21	78.6
80	0	0	0.3	21.1	78.6
100	0	0	0.3	21.1	78.6
120	0	0	0.3	21.1	78.6
150		0	0.3	21.1	78.6
180		0	0.3	21.1	78.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP MS-BH21
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1
Date/Time	Wednesday 2022-11-16 15:08
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.15
Datum	Cover Level
Datum to GL [m]	0.28
Depth to Water [m BD]	1.28
Depth to Water [m BGL]	1.00
Depth to Base [m]	16.96

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.0
Steady State Value	1.0
Calculated time to steady state	2.0
	Oxygen [%v/v]
Peak Value	20.7
Steady State Value	20.7
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1	20.7	78.3
40	0	0	1	20.7	78.3
60	0	0	1	20.7	78.3
80	0	0	1	20.7	78.3
100	0	0	1	20.7	78.3
120	0	0	1	20.7	78.3
150		0	1	20.7	78.3
180		0	1	20.7	78.3

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Tuesday 2022-11-29	11:55
Weather	Overcast, damp	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	17.50
Atmospheric Pressure [mbar]	1019
Differential Pressure [mbar]	0.03
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	1.40
Depth to Water [m BGL]	0.84
Depth to Base [m]	17.22

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.3
Steady State Value	1.3
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.6
Steady State Value	20.6
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.3	20.9	77.8
40	0	0	1.3	20.7	78
60	0	0	1.3	20.6	78.1
80	0	0	1.3	20.6	78.1
100	0	0	1.3	20.6	78.1
120	0	0	1.3	20.6	78.1
150		0	1.3	20.6	78.1
180		0	1.3	20.6	78.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Tuesday 2022-12-13	11:40
Weather	Sunny, Frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	17.50
Atmospheric Pressure [mbar]	1010
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	1.37
Depth to Water [m BGL]	0.81
Depth to Base [m]	17.23

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.9
Steady State Value	1.9
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.8
Steady State Value	20.8
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.9	21.3	76.7
40	0	0	1.9	20.9	77.3
60	0	0	1.9	20.8	77.3
80	0	0	1.9	20.8	77.3
100	0	0	1.9	20.8	77.3
120	0	0	1.9	20.8	77.3
150		0	1.9	20.8	77.3
180		0	1.9	20.8	77.3

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP MS-BH23
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Thursday 2022-11-17	15:46
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	980
Differential Pressure [mbar]	-0.05
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	0.59
Depth to Water [m BGL]	0.03
Depth to Base [m]	3.44

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.1
Steady State Value	0.1
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.1
Steady State Value	1.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.5
Steady State Value	20.5
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0.1	1.1	20.7	78.2
40	0	0.1	1	20.5	78.4
60	0	0.1	1	20.5	78.4
80	0	0.1	1	20.5	78.4
100	0	0.1	1	20.5	78.4
120	0	0.1	1	20.5	78.4
150		0.1	1	20.5	78.4
180		0.1	1	20.5	78.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH23
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Thursday 2022-12-01	10:59
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.

If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	-0.11
Datum	Cover Level
Datum to GL [m]	0.58
Depth to Water [m BD]	1.01
Depth to Water [m BGL]	0.43
Depth to Base [m]	3.43

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.7
Steady State Value	1.7
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	19.7
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.7	20.3	78
40	0	0	1.7	19.7	78.6
60	0	0	1.7	19.7	78.6
80	0	0	1.7	19.7	78.6
100	0	0	1.7	19.7	78.6
120	0	0	1.7	19.7	78.6
150		0	1.7	19.7	78.6
180		0	1.7	19.7	78.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH23
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	12:55
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	6.00
Atmospheric Pressure [mbar]	1004
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.58
Depth to Water [m BD]	1.13
Depth to Water [m BGL]	0.55
Depth to Base [m]	3.43

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.1
Steady State Value	2.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.8
Steady State Value	19.8
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.1	20.4	77.5
40	0	0	2.1	19.8	78.1
60	0	0	2.1	19.8	78.1
80	0	0	2.1	19.8	78.1
100	0	0	2.1	19.8	78.1
120	0	0	2.1	19.8	78.1
150		0	2.1	19.8	78.1
180		0	2.1	19.8	78.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP MS-BH25
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1
Date/Time	Friday 2022-11-18 10:36
Weather	Sunny, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	994
Differential Pressure [mbar]	0.30
Datum	Ground level
Datum to GL [m]	0.00
Depth to Water [m BD]	1.54
Depth to Water [m BGL]	1.54
Depth to Base [m]	3.24

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	3
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0.2
Steady State Value	0.0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.1
Steady State Value	0.0
Calculated time to steady state	80
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.2
Steady State Value	19.2
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0.2	0.1	0.8	19.8	79.4
40	0.1	0.1	0.8	19.2	79.9
60	0	0.1	0.8	19.2	79.9
80	0	0	0.8	19.2	80
100	0	0	0.8	19.2	80
120	0	0	0.8	19.2	80
150		0	0.8	19.2	80
180		0	0.8	19.2	80

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH25
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	3
Date/Time	Thursday 2022-12-01 12:12
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1027
Differential Pressure [mbar]	-0.05
Datum	Ground level
Datum to GL [m]	0.00
Depth to Water [m BD]	1.56
Depth to Water [m BGL]	1.56
Depth to Base [m]	3.23

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.1
Steady State Value	0.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	19.7
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.1	20.6	79.3
40	0	0	0.1	19.7	80.2
60	0	0	0.1	19.7	80.2
80	0	0	0.1	19.7	80.2
100	0	0	0.1	19.7	80.2
120	0	0	0.1	19.7	80.2
150		0	0.1	19.7	80.2
180		0	0.1	19.7	80.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH25
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Thursday 2022-12-15	09:13
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1005
Differential Pressure [mbar]	0.05
Datum	Ground level
Datum to GL [m]	0.00
Depth to Water [m BD]	1.62
Depth to Water [m BGL]	1.62
Depth to Base [m]	3.23

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.2
Steady State Value	0.2
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.6
Steady State Value	19.6
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.2	20.4	79.4
40	0	0	0.2	20.1	79.7
60	0	0	0.2	19.7	80.1
80	0	0	0.2	19.6	80.1
100	0	0	0.2	19.6	80.1
120	0	0	0.2	19.6	80.1
150		0	0.2	19.6	80.1
180		0	0.2	19.6	80.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH101
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1
Date/Time	Tuesday 2022-11-15 12:30
Weather	Rain, wet.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.16
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	16.67
Depth to Water [m BGL]	16.02
Depth to Base [m]	20.34

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.5
Steady State Value	5.5
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	5.4
Steady State Value	5.4
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	5.4	9.6	75
40	0	0	5.5	5.8	78.7
60	0	0	5.5	5.5	8
80	0	0	5.5	5.4	89.1
100	9	0	5.5	5.4	89.1
120	0	0	5.5	5.4	89.1
150		0	5.5	5.4	89.1
180		0	5.5	5.4	89.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH101
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	3
Date/Time	Wednesday 2022-11-30 13:45
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	21.00
Atmospheric Pressure [mbar]	1022
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	16.90
Depth to Water [m BGL]	16.25
Depth to Base [m]	20.22

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.8
Steady State Value	1.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	18.5
Steady State Value	18.5
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.8	19.7	78.5
40	0	0	1.8	18.7	79.5
60	0	0	1.8	18.5	79.7
80	0	0	1.8	18.5	79.7
100	0	0	1.8	18.5	79.7
120	0	0	1.8	18.5	79.7
150		0	1.8	18.5	79.7
180		0	1.8	18.5	79.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH101
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	5
Date/Time	Thursday 2022-12-15 11:31
Weather	Sunny, frozen

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	21.00
Atmospheric Pressure [mbar]	1006
Differential Pressure [mbar]	-0.07
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	16.84
Depth to Water [m BGL]	16.19
Depth to Base [m]	20.27

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.0
Steady State Value	5.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	14.0
Steady State Value	14.0
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	4.9	20.1	80
40	0	0	5	14.6	80.4
60	0	0	5	14.1	80.9
80	0	0	5	14	81
100	0	0	5	14	81
120	0	0	5	14	81
150		0	5	14	81
180		0	5	14	81

REMARKS

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Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	BH102
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	13:30
Weather	Rain, wet	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	991
Differential Pressure [mbar]	-0.09
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	17.44
Depth to Water [m BGL]	16.72
Depth to Base [m]	29.98

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	10.1
Steady State Value	10.1
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	7.1
Steady State Value	7.1
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	9.8	13.3	76.9
40	0	0	10	7.8	82.2
60	0	0	10.1	7.3	82.6
80	0	0	10.1	7.1	82.8
100	0	0	10.1	7.1	82.8
120	0	0	10.1	7.1	82.8
150		0	10.1	7.1	82.8
180		0	10.1	7.1	82.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	BH102
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Wednesday 2022-11-30	14:40
Weather	Overcast, damp	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	30.00
Atmospheric Pressure [mbar]	1022
Differential Pressure [mbar]	0.21
Datum	Cover Level
Datum to GL [m]	0.72
Depth to Water [m BD]	17.30
Depth to Water [m BGL]	16.58
Depth to Base [m]	29.83

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0.1
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.1
Steady State Value	0.1
Calculated time to steady state	40
	CO2 [%v/v]
Peak Value	6
Steady State Value	6
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	8.9
Steady State Value	8.9
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0.1	0	5.9	14.9	79.2
40	0.1	0.1	6	9	84.9
60	0	0.1	6	9	84.9
80	0	0.1	6	8.9	85
100	0	0.1	6	8.9	85
120	0	0.1	6	8.9	85
150		0.1	6	8.9	85
180		0.1	6	8.9	85

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	BH103
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	14:35
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.21
Datum	Cover Level
Datum to GL [m]	0.73
Depth to Water [m BD]	18.75
Depth to Water [m BGL]	18.02
Depth to Base [m]	27.64

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	14.0
Steady State Value	14.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	0.6
Steady State Value	0.6
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	13.6	9	77.4
40	0	0	14	1	85
60	0	0	14	0.8	85.2
80	0	0	14	0.7	85.3
100	0	0	14	0.6	85.4
120	0	0	14	0.6	85.4
150		0	14	0.6	85.4
180		0	14	0.6	85.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	BH103
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Wednesday 2022-11-30	15:30
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	30.00
Atmospheric Pressure [mbar]	1022
Differential Pressure [mbar]	0.09
Datum	Cover Level
Datum to GL [m]	0.73
Depth to Water [m BD]	18.48
Depth to Water [m BGL]	17.75
Depth to Base [m]	26.98

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.7
Steady State Value	0.7
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.7
Steady State Value	20.7
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.7	20.9	78.6
40	0	0	0.7	20.7	78.4
60	0	0	0.7	20.7	78.4
80	0	0	0.7	20.7	78.4
100	0	0	0.7	20.7	78.4
120	0	0	0.7	20.7	78.4
150		0	0.7	20.7	78.4
180		0	0.7	20.7	78.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	BH103
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Thursday 2022-12-15	13:17
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	30.00
Atmospheric Pressure [mbar]	1007
Differential Pressure [mbar]	0.09
Datum	Cover Level
Datum to GL [m]	0.73
Depth to Water [m BD]	18.44
Depth to Water [m BGL]	17.71
Depth to Base [m]	26.62

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	2
Hydrogen Sulphide (H ₂ S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO ₂ [%v/v]
Peak Value	4.2
Steady State Value	4.2
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	9.8
Steady State Value	9.8
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO ₂ [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	4	16.4	79.6
40	0	0	4.1	11	84.9
60	0	0	4.2	9.8	85.9
80	0	0	4.2	9.8	85.9
100	0	0	4.2	9.8	85.9
120	0	0	4.2	9.8	85.9
150		0	4.2	9.8	85.9
180		0	4.2	9.8	85.9

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH104
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	1
Date/Time	Tuesday 2022-11-15 15:42
Weather	Overcast, Wet.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	992
Differential Pressure [mbar]	-0.02
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	7.02
Depth to Water [m BGL]	6.47
Depth to Base [m]	8.70

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	10
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.2
Steady State Value	0.2
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.8
Steady State Value	1.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	5.3
Steady State Value	5.3
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0.2	1.8	11.5	86.5
40	0	0.2	1.8	5.5	92.5
60	0	0.2	1.8	5.4	92.6
80	0	0.2	1.8	5.3	92.7
100	0	0.2	1.8	5.3	92.7
120	0	0.2	1.8	5.3	92.7
150		0.2	1.8	5.3	92.7
180		0.2	1.8	5.3	92.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP BH104
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	3
Date/Time	Wednesday 2022-11-30 12:44
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	9.00
Atmospheric Pressure [mbar]	1023
Differential Pressure [mbar]	0.03
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	6.78
Depth to Water [m BGL]	6.23
Depth to Base [m]	8.64

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2
Steady State Value	2
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	6.8
Steady State Value	6.8
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.9	19.5	79.3
40	0	0	1.9	8.8	89.9
60	0	0	2	6.9	91.1
80	0	0	2	6.8	91.2
100	0	0	2	6.8	91.2
120	0	0	2	6.8	91.2
150		0	2	6.8	91.2
180		0	2	6.8	91.2

REMARKS

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Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH104
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Thursday 2022-12-15	14:06
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	9.00
Atmospheric Pressure [mbar]	1008
Differential Pressure [mbar]	-0.05
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	6.66
Depth to Water [m BGL]	6.11
Depth to Base [m]	8.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.3
Steady State Value	2.3
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	3.3
Steady State Value	3.3
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.2	15	82.8
40	0	0	2.3	4.6	93.1
60	0	0	2.3	3.5	94.2
80	0	0	2.3	3.4	94.3
100	0	0	2.3	3.3	94.4
120	0	0	2.3	3.3	94.4
150		0	2.3	3.3	94.4
180		0	2.3	3.3	94.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	BH106
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	12:03
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	-0.02
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	6.11

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0.4
Steady State Value	0.4
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	9.7
Steady State Value	9.7
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0.4	9.5	8.5	81.6
40	0	0.4	9.7	1.1	88.9
60	0	0.4	9.7	0.8	89.1
80	0	0.4	9.7	0.8	89.1
100	0	0.4	9.7	0.8	89.1
120	0	0.4	9.7	0.8	89.1
150		0.4	9.7	0.8	89.1
180		0.4	9.7	0.8	89.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP	BH106	
Operator	NR CM		
Skills Card			

Steady State Gas Monitoring Record

Monitoring Round	3		
Date/Time	Friday 2022-12-02	10:37	
Weather	Sunny spells, dry.		

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.50
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.11
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	6.12

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.0
Steady State Value	1.0
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.2
Steady State Value	19.2
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1	20.2	78.8
40	0	0	1	19.3	79.7
60	0	0	1	19.2	79.8
80	0	0	1	19.2	79.8
100	0	0	1	19.2	79.8
120	0	0	1	19.2	79.8
150		0	1	19.2	79.8
180		0	1	19.2	79.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	BH106
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	09:21
Weather	Sunny, frozen;	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.50
Atmospheric Pressure [mbar]	1014
Differential Pressure [mbar]	0.12
Datum	Top of Pipe
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	6.12

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.9
Steady State Value	1.9
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	17.7
Steady State Value	17.7
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.9	18.6	79.5
40	0	0	1.9	18	80.1
60	0	0	1.9	17.8	80.5
80	0	0	1.9	17.7	80.4
100	0	0	1.9	17.7	80.4
120	0	0	1.9	17.7	80.4
150		0	1.9	17.7	80.4
180		0	1.9	17.7	80.4

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS101
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	11:53
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.00
Datum	Cover Level
Datum to GL [m]	0.70
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.81

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	2
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	13.2
Steady State Value	13.2
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.7	15.3	84
40	0	0	0.8	13.4	85.2
60	0	0	0.8	13.2	86
80	0	0	0.8	13.2	86
100	0	0	0.8	13.2	86
120	0	0	0.8	13.2	86
150		0	0.8	13.2	86
180		0	0.8	13.2	86

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS101
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	10:26
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.06
Datum	Cover Level
Datum to GL [m]	0.70
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.81

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.1
Steady State Value	2.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	9.4
Steady State Value	9.4
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.1	15.9	82
40	0	0	2.1	10.1	87.8
60	0	0	2.1	9.6	88.3
80	0	0	2.1	9.5	88.4
100	0	0	2.1	9.4	88.5
120	0	0	2.1	9.4	88.5
150		0	2.1	9.4	88.5
180		0	2.1	9.4	88.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	DS	DS101	
Operator	NR CM		
Skills Card			

Steady State Gas Monitoring Record

Monitoring Round	01		
Date/Time	Friday 2022-12-16	09:11	
Weather	Sunny, frozen.		

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1013
Differential Pressure [mbar]	0.03
Datum	Cover Level
Datum to GL [m]	0.70
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.81

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.9
Steady State Value	0.9
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.1
Steady State Value	19.1
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.9	19.1	80
40	0	0	0.9	19.1	80
60	0	0	0.9	19.1	80
80	0	0	0.9	19.1	80
100	0	0	0.9	19.1	80
120	0	0	0.9	19.1	80
150		0	0.9	19.1	80
180		0	0.9	19.1	80

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS103
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	11:42
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	991
Differential Pressure [mbar]	-0.09
Datum	Cover Level
Datum to GL [m]	0.48
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.50

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	9.2
Steady State Value	9.2
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	12.2
Steady State Value	12.2
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	9	14.3	76.7
40	0	0	9.1	12.3	78.6
60	0	0	9.2	12.2	78.8
80	0	0	9.2	12.1	78.7
100	0	0	9.2	12.1	78.7
120	0	0	9.2	12.1	78.7
150		0	9.2	12.1	78.7
180		0	9.2	12.1	78.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS103
Operator	NR CN	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	10:49
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.09
Datum	Cover Level
Datum to GL [m]	0.48
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.50

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	4.9
Steady State Value	4.9
Calculated time to steady state	150
	Oxygen [%v/v]
Peak Value	16.3
Steady State Value	16.3
Calculated time to steady state	150

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.6	19.4	77
40	0	0	3.8	17.6	78.6
60	0	0	4	17.3	78.7
80	0	0	4.4	17	78.6
100	0	0	4.6	16.9	78.5
120	0	0	4.8	16.6	78.6
150		0	4.9	16.3	78.8
180		0	4.9	16.3	78.8
210		0	4.9	16.3	78.8

REMARKS	



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS103
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	09:32
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1014
Differential Pressure [mbar]	0.02
Datum	Cover Level
Datum to GL [m]	0.48
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.50

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.4
Steady State Value	2.4
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	18.7
Steady State Value	18.7
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.1	19.5	78.4
40	0	0	2.2	19.2	78.6
60	0	0	2.3	18.9	78.8
80	0	0	2.4	18.8	78.8
100	0	0	2.4	18.7	78.9
120	0	0	2.4	18.7	78.9
150		0	2.4	18.7	78.9
180		0	2.4	18.7	78.9

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS105
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	11:12
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.2
Steady State Value	3.2
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	14.2
Steady State Value	14.2
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.1	16	80.3
40	0	0	3.2	14.4	82.4
60	0	0	3.2	14.2	82.6
80	0	0	3.2	14.2	82.6
100	0	0	3.2	14.2	82.6
120	0	0	3.2	14.2	82.6
150		0	3.2	14.2	82.6
180		0	3.2	14.2	82.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS105
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	11:18
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.6
Steady State Value	2.6
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	17.1
Steady State Value	17.1
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.4	18.4	79.2
40	0	0	2.5	17.6	79.9
60	0	0	2.5	17.3	80.2
80	0	0	2.6	17.1	80.3
100	0	0	2.6	17.1	80.3
120	0	0	2.6	17.1	80.3
150		0	2.6	17.1	80.3
180		0	2.6	17.1	80.3

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS105
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	10:01
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1015
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.55
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.3
Steady State Value	1.3
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	19.8
Steady State Value	19.8
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.2	20.7	78.1
40	0	0	1.3	19.9	78.8
60	0	0	1.3	19.8	78.8
80	0	0	1.3	19.8	78.8
100	0	0	1.3	19.8	78.8
120	0	0	1.3	19.8	78.8
150		0	1.3	19.8	78.8
180		0	1.3	19.8	78.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS106
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	11:21
Weather	Rain, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.50
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.52

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	7.1
Steady State Value	7.1
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	12.2
Steady State Value	12.2
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	7	15	78
40	0	0	7.1	12.4	80.5
60	0	0	7.1	12.2	80.7
80	0	0	7.1	12.2	80.7
100	0	0	7.1	12.2	80.7
120	0	0	7.1	12.2	80.7
150		0	7.1	12.2	80.7
180		0	7.1	12.2	80.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS106
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	11:07
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.04
Datum	Cover Level
Datum to GL [m]	0.50
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.52

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.4
Steady State Value	5.4
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	13.8
Steady State Value	13.8
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	4.6	15	80.8
40	0	0	5.1	14.4	80.5
60	0	0	5.3	14	80.7
80	0	0	5.4	13.8	80.8
100	0	0	5.4	13.8	80.8
120	0	0	5.4	13.8	80.8
150		0	5.4	13.8	80.8
180		0	5.4	13.8	80.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS106
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	09:50
Weather	Sunny,frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1014
Differential Pressure [mbar]	0.10
Datum	Cover Level
Datum to GL [m]	0.50
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.52

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.8
Steady State Value	2.8
Calculated time to steady state	120
	Oxygen [%v/v]
Peak Value	17.9
Steady State Value	17.9
Calculated time to steady state	150

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.2	20.6	77.2
40	0	0	2.4	19.4	78.2
60	0	0	2.6	18.5	78.9
80	0	0	2.7	18.3	79
100	0	0	2.7	18.1	79.2
120	0	0	2.8	18	79.2
150		0	2.8	17.9	79.3
180		0	2.8	17.9	79.3
210		0	2.8	17.9	79.3

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS107
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	10:59
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	991
Differential Pressure [mbar]	0.00
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.59

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	4.0
Steady State Value	4.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	13.0
Steady State Value	13.0
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.8	15.6	80.9
40	0	0	4	13	83
60	0	0	4	13	83
80	0	0	4	13	83
100	0	0	4	13	83
120	0	0	4	13	83
150		0	4	13	83
180		0	4	13	83

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS107
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	11:27
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.12
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.59

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.1
Steady State Value	3.1
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	15.9
Steady State Value	15.9
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.5	19.5	78
40	0	0	2.6	17.6	79.8
60	0	0	3	16.1	80.9
80	0	0	3.1	15.9	81
100	0	0	3.1	15.9	81
120	0	0	3.1	15.9	81
150		0	3.1	15.9	81
180		0	3.1	15.9	81

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS107
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	10:10
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1015
Differential Pressure [mbar]	0.06
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.59

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.1
Steady State Value	1.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.0
Steady State Value	20.0
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.1	20.6	78.3
40	0	0	1.1	20	78.8
60	0	0	1.1	20	78.8
80	0	0	1.1	20	78.8
100	0	0	1.1	20	78.8
120	0	0	1.1	20	78.8
150		0	1.1	20	78.8
180		0	1.1	20	78.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS108
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	11:30
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	-0.05
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.53

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	12.4
Steady State Value	12.4
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	9.3
Steady State Value	9.3
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	11.9	13.9	74.2
40	0	0	12.3	9.7	78
60	0	0	12.4	9.5	79.1
80	0	0	12.4	9.4	78.2
100	0	0	12.4	9.3	78.3
120	0	0	12.4	9.3	78.3
150		0	12.4	9.3	78.3
180		0	12.4	9.3	78.3

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS108
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	10:55
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	-0.02
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.53

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	5.8
Steady State Value	5.8
Calculated time to steady state	100
	Oxygen [%v/v]
Peak Value	15.5
Steady State Value	15.5
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	4.7	18.4	77.7
40	0	0	4.9	16.8	78.3
60	0	0	5.3	16.2	78.5
80	0	0	5.7	15.7	78.6
100	0	0	5.8	15.5	78.7
120	0	0	5.8	15.5	78.7
150		0	5.8	15.5	78.7
180		0	5.8	15.5	78.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS108
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	09:41
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1014
Differential Pressure [mbar]	0.11
Datum	Cover Level
Datum to GL [m]	0.50
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.9
Steady State Value	2.9
Calculated time to steady state	60
	Oxygen [%v/v]
Peak Value	18.5
Steady State Value	18.5
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.8	20	77.2
40	0	0	2.8	18.8	78.4
60	0	0	2.9	18.6	78.5
80	0	0	2.9	18.5	78.6
100	0	0	2.9	18.5	78.6
120	0	0	2.9	18.5	78.6
150		0	2.9	18.5	78.6
180		0	2.9	18.5	78.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS109
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	10:48
Weather	Rain, wet	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	991
Differential Pressure [mbar]	0.10
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.48

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	11.7
Steady State Value	11.7
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.8	14	85.2
40	0	0	0.8	12	87.2
60	0	0	0.8	11.8	87.4
80	0	0	0.8	11.7	87.5
100	0	0	0.8	11.7	87.5
120	0	0	0.8	11.7	87.5
150		0	0.8	11.7	87.5
180		0	0.8	11.7	87.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS109
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	11:38
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.11
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.47

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	2
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.8
Steady State Value	0.8
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	15.6
Steady State Value	15.6
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.8	18.9	80.3
40	0	0	0.8	16.8	82.4
60	0	0	0.8	16	82.2
80	0	0	0.8	15.6	83.6
100	0	0	0.8	15.6	83.6
120	0	0	0.8	15.6	83.6
150		0	0.8	15.6	83.6
180		0	0.8	15.6	83.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS109
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	10:19
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1014
Differential Pressure [mbar]	0.09
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.48

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.6
Steady State Value	0.6
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.3
Steady State Value	19.3
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.6	20.6	78.8
40	0	0	0.6	19.6	79.8
60	0	0	0.6	19.4	80
80	0	0	0.6	19.3	80.1
100	0	0	0.6	19.3	80.1
120	0	0	0.6	19.3	80.1
150		0	0.6	19.3	80.1
180		0	0.6	19.3	80.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	DS110
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Tuesday 2022-11-15	10:35
Weather	Rain, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.19
Datum	Cover Level
Datum to GL [m]	0.60
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.54

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.5
Steady State Value	2.5
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	13.3
Steady State Value	13.3
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.5	14.5	83
40	0	0	2.5	13.5	84
60	0	0	2.5	13.3	84.2
80	0	0	2.5	13.3	84.2
100	0	0	2.5	13.3	84.2
120	0	0	2.5	13.3	84.2
150		0	2.5	13.3	84.2
180		0	2.5	13.3	84.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS110
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Friday 2022-12-02	11:50
Weather	Sunny spells, dry.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1024
Differential Pressure [mbar]	0.08
Datum	Cover Level
Datum to GL [m]	0.60
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.53

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.6
Steady State Value	2.6
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	13.8
Steady State Value	13.8
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.5	16.4	81.1
40	0	0	2.6	14	83.4
60	0	0	2.6	13.8	83.7
80	0	0	2.6	13.8	83.7
100	0	0	2.6	13.8	83.7
120	0	0	2.6	13.8	83.7
150		0	2.6	13.8	83.7
180		0	2.6	13.8	83.7

REMARKS	



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS110
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Friday 2022-12-16	10:30
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1015
Differential Pressure [mbar]	-0.01
Datum	Top of Pipe
Datum to GL [m]	0.60
Depth to Water [m BD]	Dry ✓
Depth to Water [m BGL]	Dry ✓
Depth to Base [m]	5.53

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	0
	CO2 [%v/v]
Peak Value	2.6
Steady State Value	2.6
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	14.3
Steady State Value	14.3
Calculated time to steady state	100

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.5	19	78.5
40	0	0	2.6	15.2	82.2
60	0	0	2.6	14.4	83
80	0	0	2.6	14.4	83
100	0	0	2.6	14.3	83.1
120	0	0	2.6	14.3	83.1
150		0	2.6	14.3	83.1
180		0	2.6	14.3	83.1

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	DS	DS-111	
Operator	CM NR		
Skills Card			

Steady State Gas Monitoring Record

Monitoring Round	1		
Date/Time	Tuesday 2022-11-15	09:40	
Weather	Raining		

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	N/A

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	990
Differential Pressure [mbar]	0.12
Datum	Cover Level
Datum to GL [m]	0.58
Depth to Water [m BD]	3.34
Depth to Water [m BGL]	2.76
Depth to Base [m]	4.86

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.1
Steady State Value	0.1
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	5.3
Steady State Value	5.3
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.1	12.7	86.3
40	0	0	0.1	6.2	93.7
60	0	0	0.1	5.4	94.5
80	0	0	0.1	5.3	94.6
100	0	0	0.1	5.3	94.6
120	0	0	0.1	5.3	94.6
150		0	0.1	5.3	94.6
180		0	0.1	5.3	94.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	DS	DS111	
Operator	NR CM		
Skills Card			

Steady State Gas Monitoring Record

Monitoring Round	3		
Date/Time	Wednesday 2022-11-30	11:45	
Weather	Overcast, damp.		

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1023
Differential Pressure [mbar]	0.12
Datum	Cover Level
Datum to GL [m]	0.58
Depth to Water [m BD]	3.04
Depth to Water [m BGL]	2.46
Depth to Base [m]	4.84

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.2
Steady State Value	0.2
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.8
Steady State Value	20.8
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.2	21	78.8
40	0	0	0.2	20.8	79
60	0	0	0.2	20.8	79
80	0	0	0.2	20.8	79
100	0	0	0.2	20.8	79
120	0	0	0.2	20.8	79
150		0	0.2	20.8	79
180		0	0.2	20.8	79

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS111
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Thursday 2022-12-15	10:30
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1007
Differential Pressure [mbar]	0.11
Datum	Cover Level
Datum to GL [m]	0.56
Depth to Water [m BD]	2.87
Depth to Water [m BGL]	2.31
Depth to Base [m]	4.86

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.2
Steady State Value	0.1
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.3
Steady State Value	20.3
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.2	20.4	79.4
40	0	0	0.1	20.3	79.6
60	0	0	0.1	20.3	79.6
80	0	0	0.1	20.3	79.6
100	0	0	0.1	20.3	79.6
120	0	0	0.1	20.3	79.6
150		0	0.1	20.3	79.6
180		0	0.1	20.3	79.6

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	AR-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Wednesday 2022-11-16	11:26
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	989
Differential Pressure [mbar]	0.09
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	2.83
Depth to Water [m BGL]	2.30
Depth to Base [m]	5.47

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.9
Steady State Value	0.9
Calculated time to steady state	120
	Oxygen [%v/v]
Peak Value	18.8
Steady State Value	19.9
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.5	20.5	79
40	0	0	2.2	18.8	79
60	0	0	1.5	19.4	79.1
80	0	0	1.3	19.9	78.7
100	0	0	1	19.9	79.1
120	0	0	0.9	19.9	79.2
140		0	0.9	19.9	79.2
160		0	0.9	19.9	79.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC AR-BH01
Operator	NR CM
Skills Card	

Steady State Gas Monitoring Record

Monitoring Round	3
Date/Time	Thursday 2022-12-01 14:08
Weather	Overcast, damp.

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	2.56
Depth to Water [m BGL]	2.03
Depth to Base [m]	5.46

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.0
Steady State Value	2.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.0
Steady State Value	20.0
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2	20.4	77.6
40	0	0	2	20	78
60	0	0	2	20	78
80	0	0	2	20	78
100	0	0	2	20	78
120	0	0	2	20	78
150		0	2	20	78
180		0	2	20	78

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	AR-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	14:55
Weather	Sunny	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1004
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.53
Depth to Water [m BD]	2.61
Depth to Water [m BGL]	2.08
Depth to Base [m]	5.45

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.9
Steady State Value	1.9
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	21.1
Steady State Value	21.1
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.9	21.4	76.7
40	0	0	1.9	21.1	77
60	0	0	1.9	21.1	77
80	0	0	1.9	21.1	77
100	0	0	1.9	21.1	77
120	0	0	1.9	21.1	77
150		0	1.9	21.1	77
180		0	1.9	21.1	77

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	AR-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Wednesday 2022-11-16	10:20
Weather	Overcast, wet.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	989
Differential Pressure [mbar]	989
Datum	Cover Level
Datum to GL [m]	0.63
Depth to Water [m BD]	2.15
Depth to Water [m BGL]	1.52
Depth to Base [m]	10.44

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	0.5
Steady State Value	0.5
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	21.1
Steady State Value	21.1
Calculated time to steady state	20

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	0.5	21.1	78.4
40	0	0	0.5	21.1	78.4
60	0	0	0.5	21.1	78.4
80	0	0	0.5	21.1	78.4
100	0	0	0.5	21.1	78.4
120	0	0	0.5	21.1	78.4
150		0	0.5	21.1	78.4
180		0	0.5	21.2	78.4

REMARKS

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Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	AR-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Thursday 2022-12-01	13:16
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.62
Depth to Water [m BD]	1.83
Depth to Water [m BGL]	1.21
Depth to Base [m]	10.44

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	26
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.4
Steady State Value	2.4
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	20.4
Steady State Value	20.4
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.4	20.8	76.6
40	0	0	2.4	20.5	77.1
60	0	0	2.4	20.4	77.2
80	0	0	2.4	20.4	77.2
100	0	0	2.4	20.4	77.2
120	0	0	2.4	20.4	77.2
150		0	2.4	20.4	77.2
180		0	2.4	20.4	77.2

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	AR-BH02
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Wednesday 2022-12-14	14:00
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	10.00
Atmospheric Pressure [mbar]	1004
Differential Pressure [mbar]	-0.12
Datum	Cover Level
Datum to GL [m]	0.62
Depth to Water [m BD]	1.85
Depth to Water [m BGL]	1.23
Depth to Base [m]	10.44

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	21
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	3.6
Steady State Value	1.1
Calculated time to steady state	180
	Oxygen [%v/v]
Peak Value	20.5
Steady State Value	21.1
Calculated time to steady state	150

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	3.6	20.9	75.4
40	0	0	3.2	20.5	76.4
60	0	0	2.5	20.6	76.9
80	0	0	2	20.7	77.3
100	0	0	1.6	20.9	77.5
120	0	0	1.3	21	77.7
150		0	1.2	21.1	77.7
180		0	1.1	21.1	77.8
210		0	1.1	21.1	77.8
240		0	1.1	21.1	77.8

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	HR-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	1	
Date/Time	Friday 2022-11-18	08:56
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	na

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	0.00
Atmospheric Pressure [mbar]	993
Differential Pressure [mbar]	-0.12
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	2.02
Depth to Water [m BGL]	1.37
Depth to Base [m]	5.57

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	na
Steady VOC [ppm]	na

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	1.0
Steady State Value	1.0
Calculated time to steady state	40
	Oxygen [%v/v]
Peak Value	20.4
Steady State Value	20.5
Calculated time to steady state	40

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	1.3	20.4	78.3
40	0	0	1	20.5	78.5
60	0	0	1	20.5	78.5
80	0	0	1	20.5	78.5
100	0	0	1	20.5	78.5
120	0	0	1	20.5	78.5
150		0	1	20.5	78.5
180		0	1	20.5	78.5

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	HR-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	3	
Date/Time	Thursday 2022-12-01	15:10
Weather	Overcast, damp.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
 If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1028
Differential Pressure [mbar]	0.07
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	2.14
Depth to Water [m BGL]	1.49
Depth to Base [m]	5.56

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	1
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.0
Steady State Value	2.0
Calculated time to steady state	20
	Oxygen [%v/v]
Peak Value	19.3
Steady State Value	19.3
Calculated time to steady state	60

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2	20.3	77.7
40	0	0	2	19.5	78.5
60	0	0	2	19.3	78.7
80	0	0	2	19.3	78.7
100	0	0	2	19.3	78.7
120	0	0	2	19.3	78.7
150		0	2	19.3	78.7
180		0	2	19.3	78.7

REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	HR-BH01
Operator	NR CM	
Skills Card		

Steady State Gas Monitoring Record

Monitoring Round	5	
Date/Time	Thursday 2022-12-15	15:08
Weather	Sunny, frozen.	

Steady State refers to the stabilisation of the readings and the become within 0.1% variation.
If results do not stabilise record final result as NSS (no steady state).

INSTRUMENT	
Type	GA5000
Serial Number	G501909
PID Serial Number	NA

MONITORING POINT	
Monitoring Point Reference	01
Tip Depth [m]	5.00
Atmospheric Pressure [mbar]	1008
Differential Pressure [mbar]	0.05
Datum	Cover Level
Datum to GL [m]	0.65
Depth to Water [m BD]	2.25
Depth to Water [m BGL]	1.60
Depth to Base [m]	5.57

ADDITIONAL GASSES	
Carbon Monoxide (CO) [ppm]	0
Hydrogen Sulphide (H2S) [ppm]	0
Peak VOC [ppm]	NA
Steady VOC [ppm]	NA

GAS SAMPLE	
ID	
Number	
Depth [m]	

STEADY STATE FINAL RESULTS	
	Flow [l/h]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	Methane [%v/v]
Peak Value	0
Steady State Value	0
Calculated time to steady state	20
	CO2 [%v/v]
Peak Value	2.2
Steady State Value	1.4
Calculated time to steady state	80
	Oxygen [%v/v]
Peak Value	19.7
Steady State Value	20.1
Calculated time to steady state	80

STEADY STATE CONCENTRATIONS					
Time [sec]	Flow [l/h]	Methane [%v/v]	CO2 [%v/v]	Oxygen [%v/v]	Gas Bal [%]
20	0	0	2.2	20.4	77.4
40	0	0	1.7	19.7	78.6
60	0	0	1.5	20	78.5
80	0	0	1.4	20.1	78.5
100	0	0	1.4	20.1	78.5
120		0	1.4	20.1	78.5
140		0	1.4	20.1	78.5
160		0	1.4	20.1	78.5

REMARKS

J.4 Water Sampling Records

Title	Reference
Water Sampling Records	Referenced by Location ID



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-25	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:03:19
Datum	Cover Level	Datum to GL [m]	0.69
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.70 [m BGL] 1.01
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	9.02 [m BGL] 8.33

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	24	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	5			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	121	1st	10:28:25	1.98	1.29	24
Depth of Purging Point [m BD]	8.50 [m BGL] 7.81	2nd	10:46:51	1.95	1.26	48
Equipment/Method	Waterra	3rd	11:05:53	1.96	1.27	72
Total Volume Purged (Actual) [litres]	121	4th	11:25:58	1.94	1.25	96
One Screen Volume [litres]	6	5th	11:35:27	1.94	1.25	121

SAMPLING DETAILS						
Equipment/Method	-	Description	Very sandy brown colour, no odour.			
Time Completed	11:44:36	ID				
Depth of Sampling Point [m BD]	8.50 [m BGL] 7.81	Number/Round	0			
Water Level after Sampl. [m BD]	1.69 [m BGL] 1.00	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	-				
	CoC Number	-				
	Storage	-				
	Preservation/Filtration	-				

GENERAL REMARKS
Well development only, no sample taken. Base level after 5 well volumes 7.98m



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Monitoring Point	01	Date
Tip Depth [m]	10.00	Operator
Monitoring Round No	0	Skills Card
Datum	Cover Level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓	✓	✓	
Date/Time	2022-10-25 10:28	2022-10-25 10:46	2022-10-25 11:05	2022-10-25 11:25	2022-10-25 11:35	
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	
Depth to Sampling Point [m BD]	8.50	8.50	8.50	8.50	8.50	
Depth to Sampling Point [m BGL]	7.81	7.81	7.81	7.81	7.81	
Depth to Water [m BD]	1.98	1.95	1.96	1.94	1.94	
Depth to Water [m BGL]	1.29	1.26	1.27	1.25	1.25	
Cumulative Volume Purged Prior to Test [l]	24	48	72	96	121	
pH Value	7.06	7.09	7.09	7.11	7.13	
Electrical Conductivity [µS/cm]	1412	1065	942	936	921	
Dissolved Oxygen [%]	7.9	6.6	5.5	5.2	5.0	
Dissolved Oxygen [mg/l]	0.85	0.71	0.59	0.56	0.53	
Redox Potential Eh [mV]	-95.6	-83.7	-93.9	-97.1	-102.4	
Total Dissolved Solids [ppm]	1228.50	923.00	819.00	819.00	819.00	
Water Temperature [°C]	11.7	11.7	11.7	11.7	11.7	
Ambient Temperature [°C]	11.0	11.0	11.0	11.0	11.0	
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during	during	



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:57:00
Datum	Cover Level	Datum to GL [m]	0.69
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.73 [m BGL] 1.04
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	7.92 [m BGL] 7.23

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	14	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy, light brown, slight eggy smell		
Time Completed	16:45:00		ID	F-ARFTXB-ONVS		
Depth of Sampling Point [m BD]	7.00	[m BGL] 6.31	Number/Round	1		
Water Level after Sampl. [m BD]	1.73	[m BGL] 1.04	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH01
Monitoring Point	01
Tip Depth [m]	0.00
Monitoring Round No	1
Datum	Cover Level

In Situ Water Fieldsheet

Date	Wednesday 2022-11-16
Operator	NR CM
Skills Card	
Datum to GL [m]	0.69

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 16:21	2022-11-16 16:24	2022-11-16 16:27	2022-11-16 16:30	2022-11-16 16:33	2022-11-16 16:36
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	7.00	7.00	7.00	7.00	7.00	7.00
Depth to Sampling Point [m BGL]	6.31	6.31	6.31	6.31	6.31	6.31
Depth to Water [m BD]	1.73	1.73	1.73	1.73	1.73	1.73
Depth to Water [m BGL]	1.04	1.04	1.04	1.04	1.04	1.04
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.0	7.03	7.05	7.06	7.07	7.06
Electrical Conductivity [µS/cm]	1013	1010	1008	1009	1010	1008
Dissolved Oxygen [%]	6.2	5.0	4.7	4.5	4.4	4.2
Dissolved Oxygen [mg/l]	0.67	0.53	0.49	0.47	0.46	0.43
Redox Potential Eh [mV]	-42.2	-47.7	-50.2	-52.1	-54.4	-55.8
Total Dissolved Solids [ppm]	884.00	884.00	884.00	884.00	884.00	884.00
Water Temperature [°C]	11.6	11.6	11.6	11.6	11.6	11.6
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:00:00
Datum	Cover Level	Datum to GL [m]	0.69
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.20 [m BGL] 0.51
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	7.89 [m BGL] 7.20

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	15	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy, light brown.		
Time Completed	11:45:00		ID	F-RR8HYB-GGRF		
Depth of Sampling Point [m BD]	7.00	[m BGL] 6.31	Number/Round	3		
Water Level after Sampl. [m BD]	1.20	[m BGL] 0.51	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Monitoring Point	01	Date
Tip Depth [m]	10.00	Operator
Monitoring Round No	3	Skills Card
Datum	Cover Level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 11:16	2022-11-29 11:19	2022-11-29 11:21	2022-11-29 11:24	2022-11-29 11:27	2022-11-29 11:30
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	7.00	7.00	7.00	7.00	7.00	7.00
Depth to Sampling Point [m BGL]	6.31	6.31	6.31	6.31	6.31	6.31
Depth to Water [m BD]	1.20	1.20	1.20	1.20	1.20	1.20
Depth to Water [m BGL]	0.51	0.51	0.51	0.51	0.51	0.51
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.97	6.97	6.96	6.96	6.96	6.96
Electrical Conductivity [µS/cm]	1437	1462	1466	1478	1483	1488
Dissolved Oxygen [%]	20.7	18.6	16.8	17.9	16.8	15.9
Dissolved Oxygen [mg/l]	22.0	1.98	1.79	1.92	1.79	1.69
Redox Potential Eh [mV]	-59.2	-58.8	-60.6	-61.0	-61.4	-61.9
Total Dissolved Solids [ppm]	1280.50	1293.00	1300.00	1313.00	1313.00	1319.50
Water Temperature [°C]	11.1	11.1	11.1	11.1	11.1	11.1
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH01
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:30:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.19 [m BGL] 0.54
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	7.90 [m BGL] 7.25

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	15	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour.		
Time Completed	13:15:00		ID	F-WD97ZB-1HAW		
Depth of Sampling Point [m BD]	7.00	[m BGL] 6.35	Number/Round	5		
Water Level after Sampl. [m BD]	1.19	[m BGL] 0.54	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH01		
Monitoring Point	01	Date	Tuesday 2022-12-13	
Tip Depth [m]	10.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.65	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18V100298	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18V100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 12:46	2022-12-13 12:49	2022-12-13 12:52	2022-12-13 12:56	2022-12-13 12:59	2022-12-13 13:02
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	7.00	7.00	7.00	7.00	7.00	7.00
Depth to Sampling Point [m BGL]	6.35	6.35	6.35	6.35	6.35	6.35
Depth to Water [m BD]	1.19	1.19	1.19	1.19	1.19	1.19
Depth to Water [m BGL]	0.54	0.54	0.54	0.54	0.54	0.54
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.89	6.90	6.90	6.90	6.90	6.90
Electrical Conductivity [µS/cm]	1453	1453	1450	1448	1444	1442
Dissolved Oxygen [%]	9.9	9.6	9.4	9.2	9.1	8.9
Dissolved Oxygen [mg/l]	1.10	1.06	1.04	1.01	0.99	0.96
Redox Potential Eh [mV]	-105.3	-106.6	-107.9	-109.2	-110.1	-111.0
Total Dissolved Solids [ppm]	1306.50	1306.50	1300.00	1300.00	1292.50	1292.50
Water Temperature [°C]	10.6	10.6	10.6	10.6	10.6	10.6
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:46:16
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	146	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
Response Zone Top [m BGL]	9.00	DNAPL [mm]	0
Response Zone Base [m BGL]	12.00	Standing Water [m BD]	1.61
		[m BGL]	1.06
		Standpipe Base Depth [m BD]	9.45
		[m BGL]	8.90

PURGING DETAILS								
Volume to be Purged (1 Well Volume) [litres]	15	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]		
Number of Well Volumes to Purge	5			[m BD]	[m BGL]			
Total Volume to be Purged [litres]	75	1st	15:25:15	1.65	1.10	15		
Depth of Purging Point [m BD]	9.00	[m BGL]	8.45	2nd	15:33:36	1.66	1.11	30
Equipment/Method	Waterra	3rd	15:41:40	1.65	1.10	45		
Total Volume Purged (Actual) [litres]	75	4th	15:49:40	1.65	1.10	60		
One Screen Volume [litres]	6	5th	16:01:41	1.65	1.10	75		

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Brown colour, very sandy, no odour			
Time Completed	16:26:41	ID				
Depth of Sampling Point [m BD]	9.00	[m BGL]	8.45	Number/Round	0	
Water Level after Sampl. [m BD]	1.63	[m BGL]	1.08	Containers	0	x 1l Glass Bottle
Volume Sampled [litres]	0			0		x 1l Plastic Bottle
				0		x Vial
Remarks		Transportation	-			
		CoC Number	-			
		Storage	-			
		Preservation/Filtration	-			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Monitoring Point	01	Date
Tip Depth [m]	12.00	Operator
Monitoring Round No	0	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.55

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓	✓	✓	
Date/Time	2022-10-18 15:25	2022-10-18 15:33	2022-10-18 15:41	2022-10-18 15:49	2022-10-18 16:01	
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	
Depth to Sampling Point [m BGL]	8.45	8.45	8.45	8.45	8.45	
Depth to Water [m BD]	1.65	1.66	1.65	1.65	1.65	
Depth to Water [m BGL]	1.10	1.11	1.10	1.10	1.10	
Cumulative Volume Purged Prior to Test [l]	15	30	45	60	75	
pH Value	6.84	6.78	6.78	6.78	6.78	
Electrical Conductivity [μ S/cm]	931	892	886	879	874	
Dissolved Oxygen [%]	6.4	3.8	2.7	2.5	2.4	
Dissolved Oxygen [mg/l]	0.68	0.41	0.30	0.28	0.27	
Redox Potential Eh [mV]	-84.9	-92.0	-101.1	-104.3	-107.5	
Total Dissolved Solids [ppm]	799.50	780.00	780.00	780.00	780.00	
Water Temperature [°C]	12.2	11.4	11.3	11.3	11.3	
Ambient Temperature [°C]	14.0	14.0	14.0	14.0	14.0	
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during	during	



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	NR CM	
Skills Card		
Date	Monday 2022-11-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:20:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.43 [m BGL] 0.88
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	9.13 [m BGL] 8.58

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	12	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy light brown, no odour.		
Time Completed	16:15:00		ID	F-1ZPPXB-S074		
Depth of Sampling Point [m BD]	8.50	[m BGL] 7.95	Number/Round	1		
Water Level after Sampl. [m BD]	1.43	[m BGL] 0.88	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH02		
Monitoring Point	01	Date	Monday 2022-11-14	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.55	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	14:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	14:00:00	00:00:00	00:00:00
Conductivity	18C100297	14:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-14 15:43	2022-11-14 15:46	2022-11-14 15:49	2022-11-14 15:52	2022-11-14 15:55	2022-11-14 15:58
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	8.50	8.50	8.50	8.50	8.50	8.50
Depth to Sampling Point [m BGL]	7.95	7.95	7.95	7.95	7.95	7.95
Depth to Water [m BD]	1.43	1.43	1.43	1.43	1.43	1.43
Depth to Water [m BGL]	0.88	0.88	0.88	0.88	0.88	0.88
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.54	6.58	6.59	6.60	6.60	6.61
Electrical Conductivity [µS/cm]	1038	989	985	984	988	992
Dissolved Oxygen [%]	6.9	6.6	6.2	5.9	5.7	5.5
Dissolved Oxygen [mg/l]	0.75	0.71	0.67	0.63	0.60	0.58
Redox Potential Eh [mV]	-40.8	-42.8	-45.8	-49.2	-52.5	-54.6
Total Dissolved Solids [ppm]	916.50	871.00	864.50	864.50	871.00	871.00
Water Temperature [°C]	11.3	11.3	11.3	11.3	11.3	11.3
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	NR CM	
Skills Card		
Date	Monday 2022-11-28	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:11:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.13 [m BGL] 0.58
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	9.10 [m BGL] 8.55

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	12	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly orange, slightly eggy		
Time Completed	16:00:00		ID	F - JNMFYB - XMX6		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.45	Number/Round	3		
Water Level after Sampl. [m BD]	1.13	[m BGL] 0.58	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP+RC	MS-BH02	
Monitoring Point	01	Date	Monday 2022-11-28
Tip Depth [m]	12.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.55

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	12:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	12:00:00	00:00:00	00:00:00
Conductivity	18C100297	12:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-28 15:29	2022-11-28 15:32	2022-11-28 15:35	2022-11-28 15:38	2022-11-28 15:41	2022-11-28 15:44
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.45	8.45	8.45	8.45	8.45	8.45
Depth to Water [m BD]	1.13	1.13	1.13	1.13	1.13	1.13
Depth to Water [m BGL]	0.58	0.58	0.58	0.58	0.58	0.58
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.81	6.81	6.81	6.81	6.81	6.82
Electrical Conductivity [µS/cm]	1028	1038	1040	1041	1044	1042
Dissolved Oxygen [%]	14.0	13.3	12.8	12.5	12.3	12.0
Dissolved Oxygen [mg/l]	1.52	1.45	1.39	1.25	1.30	1.28
Redox Potential Eh [mV]	-33.9	-32.5	-32.1	-32.8	-33.8	-34.5
Total Dissolved Solids [ppm]	910.00	916.50	923.00	923.00	923.00	923.00
Water Temperature [°C]	11.1	11.1	11.1	11.1	11.1	11.1
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH02
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:04:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.12 [m BGL] 0.57
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	9.12 [m BGL] 8.57

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	13	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, slight eggy odour.		
Time Completed	10:45:00		ID	F-5E17ZB-E5HW		
Depth of Sampling Point [m BD]	8.00	[m BGL]	7.45	Number/Round	5	
Water Level after Sampl. [m BD]	1.12	[m BGL]	0.57	Containers	0	x 1l Glass Bottle
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet				
Project Reference	F212561					
Location ID	CP+RC MS-BH02					
Monitoring Point	01	Date	Tuesday 2022-12-13			
Tip Depth [m]	12.00	Operator	NR CM			
Monitoring Round No	5	Skills Card				
Datum	Cover Level	Datum to GL [m]	0.55			

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NW			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 10:20	2022-12-13 10:23	2022-12-13 10:26	2022-12-13 10:29	2022-12-13 10:32	2022-12-13 10:35
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.45	7.45	7.45	7.45	7.45	7.45
Depth to Water [m BD]	1.12	1.12	1.12	1.12	1.12	1.12
Depth to Water [m BGL]	0.57	0.57	0.57	0.57	0.57	0.57
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.54	6.55	6.54	6.54	6.54	6.54
Electrical Conductivity [μ S/cm]	911	905	902	899	897	896
Dissolved Oxygen [%]	8.8	8.5	8.3	8.3	8.1	7.9
Dissolved Oxygen [mg/l]	0.98	0.96	0.93	0.92	0.90	0.86
Redox Potential Eh [mV]	-103.6	-107.2	-111.1	-113.2	-114.9	-116.4
Total Dissolved Solids [ppm]	825.50	825.50	819.00	819.00	812.50	812.50
Water Temperature [°C]	10.2	10.2	10.2	10.2	10.2	10.2
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	CM	
Skills Card		
Date	Wednesday 2022-10-19	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	16:18:08
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	250	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.91 [m BGL] 1.25
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.72 [m BGL] 5.06

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	32	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	4			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	127	1st	17:00:17	2.55	1.89	32
Depth of Purging Point [m BD]	5.00 [m BGL] 4.34	2nd	17:13:55	2.65	1.99	64
Equipment/Method	Waterra	3rd	17:32:03	2.78	2.12	96
Total Volume Purged (Actual) [litres]	128	4th	17:52:20	2.12	1.46	128
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Very sandy brown colour, no odour			
Time Completed	18:16:31	ID				
Depth of Sampling Point [m BD]	5.00 [m BGL] 4.34	Number/Round	0			
Water Level after Sampl. [m BD]	2.12 [m BGL] 1.46	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks		Transportation	-			
		CoC Number	-			
		Storage	-			
		Preservation/Filtration	-			

GENERAL REMARKS
Well development only, no sample taken.



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH03	
Monitoring Point	01	Date	Wednesday 2022-10-19
Tip Depth [m]	6.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.66

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS	✓	✓	✓	✓		
Date/Time	2022-10-19 17:00	2022-10-19 17:13	2022-10-19 17:31	2022-10-19 17:52		
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample		
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00		
Depth to Sampling Point [m BGL]	4.34	4.34	4.34	4.34		
Depth to Water [m BD]	2.55	2.65	2.78	2.12		
Depth to Water [m BGL]	1.89	1.99	2.12	1.46		
Cumulative Volume Purged Prior to Test [l]	32	64	96	128		
pH Value	7.41	7.22	7.15	7.14		
Electrical Conductivity [μ S/cm]	1538	1150	1133	1118		
Dissolved Oxygen [%]	2.5	1.4	1.4	1.5		
Dissolved Oxygen [mg/l]	0.26	0.14	0.15	0.16		
Redox Potential Eh [mV]	-116.0	-125.6	-119.2	-123.4		
Total Dissolved Solids [ppm]	1300.00	981.50	981.50	981.50		
Water Temperature [°C]	12.9	12.3	12.3	12.3		
Ambient Temperature [°C]	14.0	14.0	14.0	14.0		
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during		



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:59:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.83 [m BGL] 1.17
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	4.97 [m BGL] 4.31

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	16	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, no odour.		
Time Completed	10:45:00		ID	F-T3XUXB-9Z9N		
Depth of Sampling Point [m BD]	4.50	[m BGL] 3.84	Number/Round	1		
Water Level after Sampl. [m BD]	1.83	[m BGL] 1.17	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH03		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.66	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 10:18	2022-11-17 10:21	2022-11-17 10:24	2022-11-17 10:27	2022-11-17 10:30	2022-11-17 10:33
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.50	4.50	4.50	4.50	4.50	4.50
Depth to Sampling Point [m BGL]	3.84	3.84	3.84	3.84	3.84	3.84
Depth to Water [m BD]	1.83	1.83	1.83	1.83	1.83	1.83
Depth to Water [m BGL]	1.17	1.17	1.17	1.17	1.17	1.17
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.33	7.32	7.33	7.32	7.32	7.32
Electrical Conductivity [µS/cm]	877	876	875	874	874	876
Dissolved Oxygen [%]	20.2	18.6	16.9	16.6	16.2	16.0
Dissolved Oxygen [mg/l]	2.16	1.99	1.81	1.79	1.75	1.69
Redox Potential Eh [mV]	-50.4	-54.4	-56.2	-58.8	-60.1	-61.6
Total Dissolved Solids [ppm]	754.00	754.00	754.00	754.00	754.00	754.00
Water Temperature [°C]	12.2	12.2	12.2	12.2	12.2	12.2
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:06:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.40 [m BGL] 0.74
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	4.96 [m BGL] 4.30

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	17	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown		
Time Completed	10:50:00		ID	F-4P7HYB-SLLZ		
Depth of Sampling Point [m BD]	4.50	[m BGL] 3.84	Number/Round	3		
Water Level after Sampl. [m BD]	1.40	[m BGL] 0.74	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH03		
Monitoring Point	01	Date	Tuesday 2022-11-29	
Tip Depth [m]	6.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.66	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 10:21	2022-11-29 10:24	2022-11-29 10:27	2022-11-29 10:30	2022-11-29 10:33	2022-11-29 10:36
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.50	4.50	4.50	4.50	4.50	4.50
Depth to Sampling Point [m BGL]	3.84	3.84	3.84	3.84	3.84	3.84
Depth to Water [m BD]	1.40	1.40	1.40	1.40	1.40	1.40
Depth to Water [m BGL]	0.74	0.74	0.74	0.74	0.74	0.74
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.09	7.09	7.10	7.10	7.10	7.10
Electrical Conductivity [µS/cm]	1156	1158	1160	1157	1155	1558
Dissolved Oxygen [%]	6.0	5.8	5.6	5.7	5.9	5.8
Dissolved Oxygen [mg/l]	0.64	0.62	0.59	0.60	0.61	0.70
Redox Potential Eh [mV]	-71.1	-73.4	-75.9	-77.3	-79.0	-80.8
Total Dissolved Solids [ppm]	1007.50	1007.50	1014.00	1007.50	1007.50	1007.50
Water Temperature [°C]	11.7	11.7	11.7	11.7	11.7	11.7
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH03
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:08:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.38 [m BGL] 0.72
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	4.96 [m BGL] 4.30

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	17	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour.		
Time Completed	14:50:00		ID	F-UVB7ZB-D7NG		
Depth of Sampling Point [m BD]	4.00	[m BGL] 3.34	Number/Round	5		
Water Level after Sampl. [m BD]	1.38	[m BGL] 0.72	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP+RC	MS-BH03	
Monitoring Point	01	Date	Tuesday 2022-12-13
Tip Depth [m]	6.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.66

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 14:24	2022-12-13 14:27	2022-12-13 14:30	2022-12-13 14:33	2022-12-13 14:36	2022-12-13 14:39
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.00	4.00	4.00	4.00	4.00	4.00
Depth to Sampling Point [m BGL]	3.34	3.34	3.34	3.34	3.34	3.34
Depth to Water [m BD]	1.38	1.38	1.38	1.38	1.38	1.38
Depth to Water [m BGL]	0.72	0.72	0.72	0.72	0.72	0.72
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.15	7.14	7.14	7.14	7.14	7.14
Electrical Conductivity [µS/cm]	1065	1068	1071	1073	1075	1078
Dissolved Oxygen [%]	10.1	9.7	9.3	8.9	8.6	8.4
Dissolved Oxygen [mg/l]	1.13	1.08	1.03	0.99	0.95	0.92
Redox Potential Eh [mV]	-14.1	-21.4	-25.7	-28.9	-31.0	-35.4
Total Dissolved Solids [ppm]	968.50	975.00	975.00	975.00	981.50	981.50
Water Temperature [°C]	9.9	9.9	9.9	9.9	9.9	9.9
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	16:42:35
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.87 [m BGL] 1.15
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.87 [m BGL] 6.15

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	33	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	4			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	132	1st	17:00:14	2.34	1.62	33
Depth of Purging Point [m BD]	6.00 [m BGL] 5.28	2nd	17:10:47	2.22	1.50	66
Equipment/Method	Waterra	3rd	17:19:25	2.25	1.53	99
Total Volume Purged (Actual) [litres]	122	4th	17:32:27	2.24	1.52	122
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Very sandy, brown colour, no odour			
Time Completed	17:49:49	ID				
Depth of Sampling Point [m BD]	6.00 [m BGL] 5.28	Number/Round	0			
Water Level after Sampl. [m BD]	1.90 [m BGL] 1.18	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
Remarks	Transportation	-				
	CoC Number	-				
	Storage	-				
	Preservation/Filtration	-				

GENERAL REMARKS
Well development only, no sample taken



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH05	
Monitoring Point	01	Date	Tuesday 2022-10-18
Tip Depth [m]	6.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.72

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS	✓	✓	✓	✓		
Date/Time	2022-10-18 17:00	2022-10-18 17:10	2022-10-18 17:19	2022-10-18 17:32		
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample		
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00		
Depth to Sampling Point [m BGL]	5.28	5.28	5.28	5.28		
Depth to Water [m BD]	2.34	2.22	2.25	2.24		
Depth to Water [m BGL]	1.62	1.50	1.53	1.52		
Cumulative Volume Purged Prior to Test [l]	33	66	99	122		
pH Value	6.66	6.78	6.75	6.72		
Electrical Conductivity [µS/cm]	1610	1623	1605	1597		
Dissolved Oxygen [%]	10.8	3.0	2.8	2.7		
Dissolved Oxygen [mg/l]	1.15	0.32	0.30	0.29		
Redox Potential Eh [mV]	-45.2	-89.7	-87.7	-88.4		
Total Dissolved Solids [ppm]	1384.50	1404.00	1404.00	1404.00		
Water Temperature [°C]	12.3	11.9	11.9	11.9		
Ambient Temperature [°C]	13.0	13.0	13.0	13.0		
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during		



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:58:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.73
		[m BGL]	1.01
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.42
		[m BGL]	5.70

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	29	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown colour, no odour.		
Time Completed	15:00:00		ID	F - IVCTXB-UY4J		
Depth of Sampling Point [m BD]	6.00	[m BGL]	5.28	Number/Round	1	
Water Level after Sampl. [m BD]	1.73	[m BGL]	1.01	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH05
Monitoring Point	01
Tip Depth [m]	0.00
Monitoring Round No	1
Datum	Cover Level

In Situ Water Fieldsheet

Date	Wednesday 2022-11-16
Operator	NR CM
Skills Card	
Datum to GL [m]	0.72

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 14:18	2022-11-16 14:21	2022-11-16 14:25	2022-11-16 14:28	2022-11-16 14:31	2022-11-16 14:35
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.28	5.28	5.28	5.28	5.28	5.28
Depth to Water [m BD]	1.73	1.73	1.73	1.73	1.73	1.73
Depth to Water [m BGL]	1.01	1.01	1.01	1.01	1.01	1.01
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.07	7.06	7.04	7.03	7.03	7.02
Electrical Conductivity [µS/cm]	1081	1072	1072	1070	1072	1073
Dissolved Oxygen [%]	13.7	10.5	6.2	5.8	5.6	5.2
Dissolved Oxygen [mg/l]	1.40	1.13	0.67	0.62	0.59	0.54
Redox Potential Eh [mV]	-19.7	-32.7	-42.6	-50.2	-56.7	-61.0
Total Dissolved Solids [ppm]	942.50	936.00	936.00	929.50	936.00	936.00
Water Temperature [°C]	11.8	11.8	11.8	11.8	11.8	11.8
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:46:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.34 [m BGL] 0.62
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.42 [m BGL] 5.70

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	30	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slight orangey brown		
Time Completed	13:30:00		ID	F-PADHYB-C6NV		
Depth of Sampling Point [m BD]	6.00	[m BGL] 5.28	Number/Round	3		
Water Level after Sampl. [m BD]	1.34	[m BGL] 0.62	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH05		
Monitoring Point	01	Date	Tuesday 2022-11-29	
Tip Depth [m]	6.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 13:00	2022-11-29 13:03	2022-11-29 13:06	2022-11-29 13:09	2022-11-29 13:12	2022-11-29 13:15
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.28	5.28	5.28	5.28	5.28	5.28
Depth to Water [m BD]	1.34	1.34	1.34	1.34	1.34	1.34
Depth to Water [m BGL]	0.62	0.62	0.62	0.62	0.62	0.62
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.90	6.89	6.89	6.90	6.90	6.90
Electrical Conductivity [µS/cm]	1244	1292	1299	1307	1313	1320
Dissolved Oxygen [%]	27.1	25.3	24.2	22.9	21.8	20.9
Dissolved Oxygen [mg/l]	2.93	2.70	2.59	2.45	2.34	2.22
Redox Potential Eh [mV]	-47.9	-62.4	-67.3	-70.4	-73.2	-75.9
Total Dissolved Solids [ppm]	1118.00	1144.00	1150.50	1157.00	1157.00	1163.50
Water Temperature [°C]	9.7	9.7	9.7	9.7	9.7	9.7
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH05
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:51:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.33
		[m BGL]	0.61
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.40
		[m BGL]	5.68

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	30	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour		
Time Completed	11:35:00		ID	F-9M27ZB-9VCZ		
Depth of Sampling Point [m BD]	6.00	[m BGL]	5.28	Number/Round	5	
Water Level after Sampl. [m BD]	1.33	[m BGL]	0.61	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH05		
Monitoring Point	01	Date	Tuesday 2022-12-13
Tip Depth [m]	6.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.72

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 11:05	2022-12-13 11:08	2022-12-13 11:11	2022-12-13 11:14	2022-12-13 11:17	2022-12-13 11:20
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.28	5.28	5.28	5.28	5.28	5.28
Depth to Water [m BD]	1.33	1.33	1.33	1.33	1.33	1.33
Depth to Water [m BGL]	0.61	0.61	0.61	0.61	0.61	0.61
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.72	6.73	6.73	6.74	6.74	6.74
Electrical Conductivity [µS/cm]	1496	1487	1482	1480	1478	1476
Dissolved Oxygen [%]	6.6	6.4	6.3	6.1	6.1	6.0
Dissolved Oxygen [mg/l]	0.72	0.69	0.67	0.65	0.64	0.63
Redox Potential Eh [mV]	-116.3	-125.3	-129.7	-134.2	-138.6	-141.1
Total Dissolved Solids [ppm]	1332.50	1319.50	1319.50	1319.50	1313.00	1313.00
Water Temperature [°C]	10.8	10.8	10.8	10.8	10.8	10.8
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:26:05
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	146	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.50	Standing Water [m BD]	1.62 [m BGL] 1.06
Response Zone Base [m BGL]	12.50	Standpipe Base Depth [m BD]	12.73 [m BGL] 12.17

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	32	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	5			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	158	1st	10:17:17	1.64	1.08	32
Depth of Purging Point [m BD]	12.00 [m BGL] 11.44	2nd	10:25:24	1.65	1.09	64
Equipment/Method	Waterra	3rd	10:38:20	1.65	1.09	96
Total Volume Purged (Actual) [litres]	160	4th	10:56:28	1.65	1.09	128
One Screen Volume [litres]	6	5th	11:10:29	1.65	1.09	160

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Very sandy, brown colour, no odour			
Time Completed	12:09:35	ID				
Depth of Sampling Point [m BD]	12.00 [m BGL] 11.44	Number/Round	0			
Water Level after Sampl. [m BD]	1.65 [m BGL] 1.09	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks		Transportation	-			
		CoC Number	-			
		Storage	-			
		Preservation/Filtration	-			

GENERAL REMARKS
Well development only, no sample taken.



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Monitoring Point	01	Date
Tip Depth [m]	12.50	Operator
Monitoring Round No	0	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.56

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS	✓	✓	✓	✓	✓
Date/Time	2022-10-18 10:17	2022-10-18 10:25	2022-10-18 10:38	2022-10-18 10:56	2022-10-18 11:10
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	12.00	12.00	12.00	12.00	12.00
Depth to Sampling Point [m BGL]	11.44	11.44	11.44	11.44	11.44
Depth to Water [m BD]	1.64	1.65	1.65	1.65	1.65
Depth to Water [m BGL]	1.08	1.09	1.09	1.09	1.09
Cumulative Volume Purged Prior to Test [l]	32	64	96	128	160
pH Value	7.49	7.34	7.27	7.21	7.12
Electrical Conductivity [µS/cm]	1444	1395	1363	1345	1337
Dissolved Oxygen [%]	10.3	8.3	7.3	7.0	6.8
Dissolved Oxygen [mg/l]	1.11	0.90	0.79	0.72	0.70
Redox Potential Eh [mV]	-81.2	-78.6	-73.6	-72.1	-70.4
Total Dissolved Solids [ppm]	1261.00	1215.50	1196.00	1196.00	1196.00
Water Temperature [°C]	11.7	11.7	11.7	11.7	11.7
Ambient Temperature [°C]	9.0	9.0	9.0	9.0	9.0
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during	during



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:50:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.50	Standing Water [m BD]	1.39 [m BGL] 0.83
Response Zone Base [m BGL]	12.50	Standpipe Base Depth [m BD]	11.46 [m BGL] 10.90

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	30	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slight yellow, no odour		
Time Completed	15:35:00		ID	F-K3AVXB-ZLFL		
Depth of Sampling Point [m BD]	11.00	[m BGL] 10.44	Number/Round	1		
Water Level after Sampl. [m BD]	1.39	[m BGL] 0.83	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Monitoring Point	01	Date
Tip Depth [m]	0.00	Operator
Monitoring Round No	1	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.56

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 15:09	2022-11-17 15:12	2022-11-17 15:15	2022-11-17 15:18	2022-11-17 15:21	2022-11-17 15:24
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	11.00	11.00	11.00	11.00	11.00	11.00
Depth to Sampling Point [m BGL]	10.44	10.44	10.44	10.44	10.44	10.44
Depth to Water [m BD]	1.39	1.39	1.39	1.39	1.39	1.39
Depth to Water [m BGL]	0.83	0.83	0.83	0.83	0.83	0.83
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.88	6.88	6.87	6.87	6.87	6.87
Electrical Conductivity [µS/cm]	1664	1661	1664	1666	1668	1669
Dissolved Oxygen [%]	15.5	14.8	14.3	13.9	13.5	13.2
Dissolved Oxygen [mg/l]	1.61	1.52	1.49	1.44	1.40	1.35
Redox Potential Eh [mV]	-10.2	-11.3	-12.0	-12.7	-13.3	-13.9
Total Dissolved Solids [ppm]	1449.50	1449.50	1449.50	1456.00	1456.00	1456.00
Water Temperature [°C]	11.6	11.6	11.6	11.6	11.6	11.6
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:15:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.50	Standing Water [m BD]	1.20 [m BGL] 0.64
Response Zone Base [m BGL]	12.50	Standpipe Base Depth [m BD]	11.45 [m BGL] 10.89

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	30	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge		
Time Completed	10:00:00		ID	F-S7SKYB-LKQ9		
Depth of Sampling Point [m BD]	11.00	[m BGL] 10.44	Number/Round	3		
Water Level after Sampl. [m BD]	1.20	[m BGL] 0.64	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation		External Courier			
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH07		
Monitoring Point	01	Date	Thursday 2022-12-01
Tip Depth [m]	12.50	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.56

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 09:33	2022-12-01 09:36	2022-12-01 09:39	2022-12-01 09:42	2022-12-01 09:45	2022-12-01 09:48
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	11.00	11.00	11.00	11.00	11.00	11.00
Depth to Sampling Point [m BGL]	10.44	10.44	10.44	10.44	10.44	10.44
Depth to Water [m BD]	1.20	1.20	1.20	1.20	1.20	1.20
Depth to Water [m BGL]	0.64	0.64	0.64	0.64	0.64	0.64
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.73	7.72	7.71	7.70	7.70	7.70
Electrical Conductivity [µS/cm]	1573	1568	1567	1369	1370	1368
Dissolved Oxygen [%]	15.9	15.3	14.8	14.6	14.2	14.8
Dissolved Oxygen [mg/l]	1.71	1.66	1.60	1.56	1.50	1.69
Redox Potential Eh [mV]	-142.1	-140.3	-138.5	137.0	135.8	-134.7
Total Dissolved Solids [ppm]	1391.00	1391.00	1384.50	1391.00	1391.00	1391.00
Water Temperature [°C]	11	11	11	11	11	11
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH07
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:12:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.50	Standing Water [m BD]	1.16 [m BGL] 0.60
Response Zone Base [m BGL]	12.50	Standpipe Base Depth [m BD]	11.45 [m BGL] 10.89

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	30	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge.		
Time Completed	10:00:00		ID	F - KF08ZB - SMME		
Depth of Sampling Point [m BD]	11.00	[m BGL] 10.44	Number/Round	5		
Water Level after Sampl. [m BD]	1.16	[m BGL] 0.60	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH07		
Monitoring Point	01	Date	Wednesday 2022-12-14	
Tip Depth [m]	12.50	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 09:30	2022-12-14 09:34	2022-12-14 09:37	2022-12-14 09:40	2022-12-14 09:43	2022-12-14 09:46
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	11.00	11.00	11.00	11.00	11.00	11.00
Depth to Sampling Point [m BGL]	10.44	10.44	10.44	10.44	10.44	10.44
Depth to Water [m BD]	1.16	1.16	1.16	1.16	1.16	1.16
Depth to Water [m BGL]	0.60	0.60	0.60	0.60	0.60	0.60
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.21	7.21	7.21	7.21	7.21	7.21
Electrical Conductivity [µS/cm]	1338	1370	1382	1389	1386	1388
Dissolved Oxygen [%]	11.4	11.0	10.5	10.3	10.0	9.8
Dissolved Oxygen [mg/l]	1.29	1.25	1.19	1.16	1.13	1.10
Redox Potential Eh [mV]	6.6	8.4	10.1	11.8	13.9	15.3
Total Dissolved Solids [ppm]	1222.00	1248.00	1254.50	1254.50	1254.50	1254.50
Water Temperature [°C]	10.1	10.1	10.1	10.1	10.1	10.1
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH09
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:33:45
Datum	Cover Level	Datum to GL [m]	0.80
Borehole Diameter [mm]	146	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.74 [m BGL] 0.94
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	9.70 [m BGL] 8.90

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	37	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	4			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	150	1st	12:55:29	1.86	1.06	37
Depth of Purging Point [m BD]	9.00 [m BGL] 8.20	2nd	13:07:57	1.93	1.13	74
Equipment/Method	Waterra	3rd	13:17:47	1.92	1.12	111
Total Volume Purged (Actual) [litres]	148	4th	13:27:56	1.90	1.10	148
One Screen Volume [litres]	12	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Slightly clear, no odour			
Time Completed	14:22:48	ID				
Depth of Sampling Point [m BD]	9.00 [m BGL] 8.20	Number/Round	0			
Water Level after Sampl. [m BD]	1.74 [m BGL] 0.94	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks		Transportation	-			
		CoC Number	-			
		Storage	-			
		Preservation/Filtration	-			

GENERAL REMARKS
Well development only



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH09	
Monitoring Point	01	Date	Tuesday 2022-10-18
Tip Depth [m]	9.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.80

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓	✓		
Date/Time	2022-10-18 12:55	2022-10-18 13:08	2022-10-18 13:17	2022-10-18 13:27		
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample		
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00		
Depth to Sampling Point [m BGL]	8.20	8.20	8.20	8.20		
Depth to Water [m BD]	1.86	1.93	1.92	1.90		
Depth to Water [m BGL]	1.06	1.13	1.12	1.10		
Cumulative Volume Purged Prior to Test [l]	37	74	111	148		
pH Value	6.90	6.82	6.82	6.79		
Electrical Conductivity [µS/cm]	1308	1288	1270	1262		
Dissolved Oxygen [%]	15.3	9.9	9.5	9.2		
Dissolved Oxygen [mg/l]	1.64	1.06	1.02	0.99		
Redox Potential Eh [mV]	-56.5	-70.2	-73.1	-79.4		
Total Dissolved Solids [ppm]	1131.00	1105.00	1105.00	1105.00		
Water Temperature [°C]	12.1	11.8	11.8	11.8		
Ambient Temperature [°C]	14.0	14.0	14.0	14.0		
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during		



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH09
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:51:00
Datum	Cover Level	Datum to GL [m]	0.80
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.54 [m BGL] 0.74
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	9.58 [m BGL] 8.78

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	58	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	12	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, slight eggy smell.		
Time Completed	13:45:00		ID	F-8ABTXB-Q5R8		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.20	Number/Round	1		
Water Level after Sampl. [m BD]	1.54	[m BGL] 0.74	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH09		
Monitoring Point	01	Date	Wednesday 2022-11-16
Tip Depth [m]	0.00	Operator	NR CM
Monitoring Round No	1	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.80

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 13:12	2022-11-16 13:15	2022-11-16 13:18	2022-11-16 13:21	2022-11-16 13:24	2022-11-16 13:27
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.20	8.20	8.20	8.20	8.20	8.20
Depth to Water [m BD]	1.54	1.54	1.54	1.54	1.54	1.54
Depth to Water [m BGL]	0.74	0.74	0.74	0.74	0.74	0.74
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.29	7.30	7.30	7.30	7.30	7.30
Electrical Conductivity [µS/cm]	1295	1293	1292	1293	1292	1290
Dissolved Oxygen [%]	5.8	4.4	4.0	3.8	3.6	3.5
Dissolved Oxygen [mg/l]	0.63	0.48	0.44	0.41	0.39	0.37
Redox Potential Eh [mV]	-63.4	-67.9	-70.1	-73.4	-75.7	-76.9
Total Dissolved Solids [ppm]	1137.50	1137.50	1137.50	1137.50	1137.50	1131.00
Water Temperature [°C]	11.4	11.4	11.4	11.4	11.4	11.4
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP	MS-BH09	
Operator	NR CM		
Skills Card			
Date	Monday 2022-11-28		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:02:00
Datum	Cover Level	Datum to GL [m]	0.80
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.28 [m BGL] 0.48
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	9.55 [m BGL] 8.75

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	59	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	12	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, slight eggy odour.		
Time Completed	13:50:00		ID	F - ZQHFYB - NB6F		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.20	Number/Round	3		
Water Level after Sampl. [m BD]	1.28	[m BGL] 0.48	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP	MS-BH09		
Monitoring Point	01	Date	Monday 2022-11-28	
Tip Depth [m]	9.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.80	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	12:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	12:00:00	00:00:00	00:00:00
Conductivity	18C100297	12:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-28 13:20	2022-11-28 13:23	2022-11-28 13:26	2022-11-28 13:29	2022-11-28 13:32	2022-11-28 13:35
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.20	8.20	8.20	8.20	8.20	8.20
Depth to Water [m BD]	1.28	1.28	1.28	1.28	1.28	1.28
Depth to Water [m BGL]	0.48	0.48	0.48	0.48	0.48	0.48
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.74	7.73	7.72	7.72	7.72	7.72
Electrical Conductivity [µS/cm]	1251	1241	1237	1238	1237	1236
Dissolved Oxygen [%]	22.7	20.7	19.8	19.2	18.7	18.4
Dissolved Oxygen [mg/l]	2.38	2.19	2.09	2.06	1.99	1.93
Redox Potential Eh [mV]	-75.4	-78.4	-81.0	-83.2	-85.3	-86.5
Total Dissolved Solids [ppm]	1105.00	1092.00	1092.00	1092.00	1092.00	1092.00
Water Temperature [°C]	11.2	11.2	11.2	11.2	11.2	11.2
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH09
Operator	NR CM	
Skills Card		
Date	Monday 2022-12-12	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:03:00
Datum	Cover Level	Datum to GL [m]	0.80
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.24 [m BGL] 0.44
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	9.56 [m BGL] 8.76

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	59	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	12	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, slight eggy odour		
Time Completed	14:45:00		ID	F-2CK5ZB-J0TW		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.20	Number/Round	5		
Water Level after Sampl. [m BD]	1.24	[m BGL] 0.44	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP+RC	MS-BH09	
Monitoring Point	01	Date	Monday 2022-12-12
Tip Depth [m]	9.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.80

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	14:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	14:00:00	00:00:00	00:00:00
Conductivity	18C100297	14:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-12 14:18	2022-12-12 14:21	2022-12-12 14:24	2022-12-12 14:27	2022-12-12 14:30	2022-12-12 14:33
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.20	8.20	8.20	8.20	8.20	8.20
Depth to Water [m BD]	1.24	1.24	1.24	1.24	1.24	1.24
Depth to Water [m BGL]	0.44	0.44	0.44	0.44	0.44	0.44
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.55	7.54	7.54	7.54	7.54	7.54
Electrical Conductivity [µS/cm]	1575	1565	1554	1544	1542	1540
Dissolved Oxygen [%]	23.6	22.7	21.7	21.4	21.1	20.8
Dissolved Oxygen [mg/l]	2.61	2.52	2.31	2.28	2.26	2.23
Redox Potential Eh [mV]	-128.6	-130.7	-131.9	-133.6	-135.1	-136.9
Total Dissolved Solids [ppm]	1443.00	1436.50	1423.50	1410.50	1410.50	1410.50
Water Temperature [°C]	10	10	10	10	10	10
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-08	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:17:55
Datum	Cover Level	Datum to GL [m]	0.68
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.70
		[m BGL]	1.02
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.75
		[m BGL]	10.07

PURGING DETAILS								
Volume to be Purged (1 Well Volume) [litres]	40	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]		
Number of Well Volumes to Purge	3			[m BD]	[m BGL]			
Total Volume to be Purged [litres]	121	1st	15:31:22	1.76	1.08	40		
Depth of Purging Point [m BD]	10.00	[m BGL]	9.32	2nd	15:44:00	1.78	1.10	80
Equipment/Method	Waterra pump		3rd	15:58:00	1.76	1.08	120	
Total Volume Purged (Actual) [litres]	120	4th						
One Screen Volume [litres]	6	5th						

SAMPLING DETAILS						
Equipment/Method	na	Description	Slightly silty, dense light brown			
Time Completed	16:00:00	ID				
Depth of Sampling Point [m BD]	10.00	[m BGL]	9.32	Number/Round	0	
Water Level after Sampl. [m BD]	1.76	[m BGL]	1.08	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	0				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH10	
Monitoring Point	01	Date	Tuesday 2022-11-08
Tip Depth [m]	10.00	Operator	NR CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.68

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	10:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	10:00:00	00:00:00	00:00:00
Conductivity	18C100297	10:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-08 15:31	2022-11-08 15:44	2022-11-08 15:58			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	10.00	10.00	10.00			
Depth to Sampling Point [m BGL]	9.32	9.32	9.32			
Depth to Water [m BD]	1.76	1.78	1.76			
Depth to Water [m BGL]	1.08	1.10	1.08			
Cumulative Volume Purged Prior to Test [l]	40	80	120			
pH Value	7.17	7.15	7.12			
Electrical Conductivity [µS/cm]	1644	1625	1614			
Dissolved Oxygen [%]	7.2	6.8	5.9			
Dissolved Oxygen [mg/l]	0.78	0.72	0.61			
Redox Potential Eh [mV]	1456.00	1449.50	1443.00			
Total Dissolved Solids [ppm]	20.5	19.4	14.1			
Water Temperature [°C]	11.2	11.2	11.2			
Ambient Temperature [°C]	11	11	11			
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:56:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.64 [m BGL] 0.98
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.41 [m BGL] 9.75

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	37	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS					
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, strong eggy smel.	
Time Completed	11:40:00		ID	F-S7YUXB-U1EV	
Depth of Sampling Point [m BD]	10.00	[m BGL] 9.34	Number/Round	1	
Water Level after Sampl. [m BD]	1.64	[m BGL] 0.98	Containers	0	x 1l Glass Bottle
Volume Sampled [litres]	3		0	x 1l Plastic Bottle	
			0	x Vial	
Remarks	Transportation	External Courier			
	CoC Number				
	Storage	Coolbox			
	Preservation/Filtration	Temperature			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Monitoring Point	01	Date
Tip Depth [m]	0.00	Operator
Monitoring Round No	1	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.66

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C00297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 11:16	2022-11-17 11:19	2022-11-17 11:22	2022-11-17 11:25	2022-11-17 11:28	2022-11-17 11:31
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.34	9.34	9.34	9.34	9.34	9.34
Depth to Water [m BD]	1.64	1.64	1.64	1.64	1.64	1.64
Depth to Water [m BGL]	0.98	0.98	0.98	0.98	0.98	0.98
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.18	7.18	7.18	7.17	7.16	7.16
Electrical Conductivity [µS/cm]	1271	1277	1280	1282	1284	1282
Dissolved Oxygen [%]	19.4	17.3	16.1	15.6	15.0	14.5
Dissolved Oxygen [mg/l]	2.06	1.88	1.73	1.69	1.59	1.51
Redox Potential Eh [mV]	-2.5	-5.3	-8.2	-9.9	-11.8	-12.6
Total Dissolved Solids [ppm]	1118.00	1118.00	1124.50	1124.50	1124.50	1124.50
Water Temperature [°C]	11.5	11.5	11.5	11.5	11.5	11.5
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	N4 CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:38:00
Datum	Cover Level	Datum to GL [m]	0.68
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.40 [m BGL] 0.72
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.37 [m BGL] 9.69

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	37	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown yellow tinge, strong eggy/dirty odour		
Time Completed	14:20:00		ID	F-NIEHYB-CU8M		
Depth of Sampling Point [m BD]	10.00	[m BGL] 9.32	Number/Round	3		
Water Level after Sampl. [m BD]	1.40	[m BGL] 0.72	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH10		
Monitoring Point	01	Date	Tuesday 2022-11-29
Tip Depth [m]	10.00	Operator	N4 CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.68

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 13:52	2022-11-29 13:55	2022-11-29 13:58	2022-11-29 14:01	2022-11-29 14:04	2022-11-29 14:07
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.32	9.32	9.32	9.32	9.32	9.32
Depth to Water [m BD]	1.40	1.40	1.40	1.40	1.40	1.40
Depth to Water [m BGL]	0.72	0.72	0.72	0.72	0.72	0.72
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.92	6.91	6.91	6.91	6.92	6.92
Electrical Conductivity [µS/cm]	1394	1399	1397	1399	1401	1403
Dissolved Oxygen [%]	12.5	11.8	10.6	11.4	12.0	11.6
Dissolved Oxygen [mg/l]	1.37	1.30	1.17	1.24	1.29	1.25
Redox Potential Eh [mV]	12.6	2.5	-2.9	-6.5	-9.6	-11.5
Total Dissolved Solids [ppm]	1241.50	1248.00	1248.00	1248.00	1248.00	1248.00
Water Temperature [°C]	12.0	12.0	12.0	12.0	12.0	12.0
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH10
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:00:00
Datum	Cover Level	Datum to GL [m]	0.68
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.41 [m BGL] 0.73
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.37 [m BGL] 9.69

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	37	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour		
Time Completed	15:50:00		ID	F-B5D7ZB-X3G6		
Depth of Sampling Point [m BD]	10.00	[m BGL] 9.32	Number/Round	5		
Water Level after Sampl. [m BD]	1.41	[m BGL] 0.73	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH10		
Monitoring Point	01	Date	Tuesday 2022-12-13	
Tip Depth [m]	10.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.68	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100298	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 15:18	2022-12-13 14:21	2022-12-13 14:24	2022-12-13 14:27	2022-12-13 14:30	2022-12-13 14:34
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.32	9.32	9.32	9.32	9.32	9.32
Depth to Water [m BD]	1.41	1.41	1.41	1.41	1.41	1.41
Depth to Water [m BGL]	0.73	0.73	0.73	0.73	0.73	0.73
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.12	7.11	7.11	7.10	7.10	7.10
Electrical Conductivity [µS/cm]	1294	1293	1292	1294	1296	1294
Dissolved Oxygen [%]	8.4	8.1	7.8	7.6	7.5	7.3
Dissolved Oxygen [mg/l]	0.93	0.90	0.87	0.84	0.83	0.80
Redox Potential Eh [mV]	-19.8	-21.7	-23.6	-25.5	-26.9	-27.2
Total Dissolved Solids [ppm]	1183.00	1176.50	1176.50	1183.00	1183.00	1183.00
Water Temperature [°C]	9.9	9.9	9.9	9.9	9.9	9.9
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-09	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:30:00
Datum	Cover Level	Datum to GL [m]	0.67
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	5.00	Standing Water [m BD]	1.65 [m BGL] 0.98
Response Zone Base [m BGL]	8.00	Standpipe Base Depth [m BD]	9.20 [m BGL] 8.53

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	41	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	122	1st	09:52:57	2.06	1.39	41
Depth of Purging Point [m BD]	8.50 [m BGL] 7.83	2nd	10:12:10	2.00	1.33	82
Equipment/Method	Waterra Pump	3rd	10:28:31	2.05	1.38	123
Total Volume Purged (Actual) [litres]	123	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	na	Description silty, slightly sandy, dense light brown.				
Time Completed	10:40:00	ID				
Depth of Sampling Point [m BD]	8.50 [m BGL] 7.83	Number/Round 0				
Water Level after Sampl. [m BD]	2.05 [m BGL] 1.38	Containers 0 x 1l Glass Bottle				
Volume Sampled [litres]	0	0 x 1l Plastic Bottle				
Remarks	0 x Vial					
	Transportation					
	CoC Number					
	Storage					
Preservation/Filtration						

GENERAL REMARKS
base now 8.96m rising head test done after development



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH12		
Monitoring Point	01	Date	Wednesday 2022-11-09	
Tip Depth [m]	8.00	Operator	NR CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.67	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-09 09:54	2022-11-09 10:11	2022-11-09 10:28			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	8.50	8.50	8.50			
Depth to Sampling Point [m BGL]	7.83	7.83	7.83			
Depth to Water [m BD]	2.06	2.00	2.05			
Depth to Water [m BGL]	1.39	1.33	1.38			
Cumulative Volume Purged Prior to Test [l]	41	82	123			
pH Value	7.21	7.23	7.24			
Electrical Conductivity [µS/cm]	1050	1005	970			
Dissolved Oxygen [%]	3.8	1.7	1.9			
Dissolved Oxygen [mg/l]	0.41	0.18	0.20			
Redox Potential Eh [mV]	-105.4	-75.5	-69.8			
Total Dissolved Solids [ppm]	877.50	858.00	838.50			
Water Temperature [°C]	11.8	11.8	11.8			
Ambient Temperature [°C]	12	12	12			
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:50:00
Datum	Cover Level	Datum to GL [m]	0.67
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	5.00	Standing Water [m BD]	1.56
		[m BGL]	0.89
Response Zone Base [m BGL]	8.00	Standpipe Base Depth [m BD]	8.88
		[m BGL]	8.21

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, eggy odour.		
Time Completed	13:35:00		ID	F-K77VXB-UQ1G		
Depth of Sampling Point [m BD]	8.00	[m BGL]	7.33	Number/Round	1	
Water Level after Sampl. [m BD]	1.56	[m BGL]	0.89	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH12		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.67	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 13:09	2022-11-17 13:12	2022-11-17 13:15	2022-11-17 13:18	2022-11-17 13:21	2022-11-17 13:24
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.33	7.33	7.33	7.33	7.33	7.33
Depth to Water [m BD]	1.56	1.56	1.56	1.56	1.56	1.56
Depth to Water [m BGL]	0.89	0.89	0.89	0.89	0.89	0.89
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.22	7.22	7.21	7.21	7.21	7.20
Electrical Conductivity [µS/cm]	1100	1096	1094	1095	1098	1096
Dissolved Oxygen [%]	24.2	22.0	21.1	20.4	19.8	19.6
Dissolved Oxygen [mg/l]	2.63	2.39	2.28	2.20	2.14	2.10
Redox Potential Eh [mV]	-66.7	-67.3	-67.8	-68.4	-69.0	-69.6
Total Dissolved Solids [ppm]	968.70	968.50	968.50	968.50	968.50	968.50
Water Temperature [°C]	11.2	11.2	11.2	11.2	11.2	11.2
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:26:00
Datum	Cover Level	Datum to GL [m]	0.67
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	5.00	Standing Water [m BD]	1.28
		[m BGL]	0.61
Response Zone Base [m BGL]	8.00	Standpipe Base Depth [m BD]	8.89
		[m BGL]	8.22

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	39	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy, brown, strong metallic eggy odour.		
Time Completed	16:10:00		ID	F-J6IHYB-ZZMQ		
Depth of Sampling Point [m BD]	8.00	[m BGL]	7.33	Number/Round	3	
Water Level after Sampl. [m BD]	1.28	[m BGL]	0.61	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation		External Courier			
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Monitoring Point	01	Date
Tip Depth [m]	8.00	Operator
Monitoring Round No	3	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.67

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 15:41	2022-11-29 15:44	2022-11-29 15:47	2022-11-29 15:50	2022-11-29 15:53	2022-11-29 15:56
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.33	7.33	7.33	7.33	7.33	7.33
Depth to Water [m BD]	1.28	1.28	1.28	1.28	1.28	1.28
Depth to Water [m BGL]	0.61	0.61	0.61	0.61	0.61	0.61
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.96	6.98	7.00	7.01	7.02	7.02
Electrical Conductivity [µS/cm]	1495	1502	1507	1510	1512	1513
Dissolved Oxygen [%]	15.3	13.9	11.8	12.1	11.8	11.6
Dissolved Oxygen [mg/l]	1.69	1.57	1.34	1.37	1.33	1.30
Redox Potential Eh [mV]	-72.4	-74.1	-76.0	-77.8	-79.5	-81.1
Total Dissolved Solids [ppm]	1339.00	1345.50	1352.00	1352.00	1358.50	1358.50
Water Temperature [°C]	10.6	10.6	10.6	10.6	10.6	10.6
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH12
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:55:00
Datum	Cover Level	Datum to GL [m]	0.67
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	5.00	Standing Water [m BD]	1.36 [m BGL] 0.69
Response Zone Base [m BGL]	8.00	Standpipe Base Depth [m BD]	8.86 [m BGL] 8.19

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown yellow, eggy odour.		
Time Completed	11:45:00		ID	F-79X8ZB-KCI3		
Depth of Sampling Point [m BD]	8.00	[m BGL] 7.33	Number/Round	5		
Water Level after Sampl. [m BD]	1.36	[m BGL] 0.69	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH12		
Monitoring Point	01	Date	Wednesday 2022-12-14	
Tip Depth [m]	8.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.67	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 11:13	2022-12-14 11:16	2022-12-14 11:19	2022-12-14 11:22	2022-12-14 11:25	2022-12-14 11:29
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.33	7.33	7.33	7.33	7.33	7.33
Depth to Water [m BD]	1.36	1.36	1.36	1.36	1.36	1.36
Depth to Water [m BGL]	0.69	0.69	0.69	0.69	0.69	0.69
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.92	6.92	6.92	6.92	6.92	6.92
Electrical Conductivity [µS/cm]	1564	1578	1582	1585	1588	1590
Dissolved Oxygen [%]	7.1	6.9	6.8	6.8	6.6	6.5
Dissolved Oxygen [mg/l]	0.78	0.77	0.76	0.76	0.76	0.74
Redox Potential Eh [mV]	-22.1	-29.2	-31.3	-33.4	-35.6	-37.4
Total Dissolved Solids [ppm]	1436.50	1443.00	1443.00	1449.50	1449.50	1449.50
Water Temperature [°C]	9.8	9.8	9.8	9.8	9.8	9.8
Ambient Temperature [°C]	-1	-1	-1	-1	-1	-1
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-08	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:35:52
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.44 [m BGL] 0.78
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	9.25 [m BGL] 8.59

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	27	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	81	1st	10:20:29	1.49	0.83	27
Depth of Purging Point [m BD]	8.00 [m BGL] 7.34	2nd	10:30:18	1.48	0.82	54
Equipment/Method	Waterra	3rd	10:38:27	1.48	0.82	81
Total Volume Purged (Actual) [litres]	81	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS							
Equipment/Method	N/A	Description					Slightly silty, dense light brown colour.
Time Completed	10:50:00	ID		F-4K8EXB-BA8X			
Depth of Sampling Point [m BD]	8.00 [m BGL] 7.34	Number/Round		0			
Water Level after Sampl. [m BD]	1.46 [m BGL] 0.80	Containers		0	x 1l Glass Bottle		
Volume Sampled [litres]	0			0	x 1l Plastic Bottle		
Remarks			0				x Vial
	Transportation						
	CoC Number						
	Storage						
Preservation/Filtration							

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Monitoring Point	01	Date
Tip Depth [m]	10.00	Operator
Monitoring Round No	0	Skills Card
Datum	Cover Level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	10:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	10:00:00	00:00:00	00:00:00
Conductivity	18C100297	10:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-08 10:20	2022-11-08 10:30	2022-11-08 10:38			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	8.00	8.00	8.00			
Depth to Sampling Point [m BGL]	7.34	7.34	7.34			
Depth to Water [m BD]	1.49	1.48	1.49			
Depth to Water [m BGL]	0.83	0.82	0.83			
Cumulative Volume Purged Prior to Test [l]	27	54	81			
pH Value	7.54	7.51	7.46			
Electrical Conductivity [µS/cm]	1510	1532	1552			
Dissolved Oxygen [%]	8.2	6.0	7.2			
Dissolved Oxygen [mg/l]	0.88	0.64	0.76			
Redox Potential Eh [mV]	-76.5	-88.1	-72.9			
Total Dissolved Solids [ppm]	1313.00	1332.50	1332.00			
Water Temperature [°C]	11.1	11.8	11.8			
Ambient Temperature [°C]	11.0	11.0	11.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:56:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.37 [m BGL] 0.71
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	9.30 [m BGL] 8.64

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, slight eggy odour		
Time Completed	12:40:00		ID	F - EU5VXB-QY8B		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.34	Number/Round	1		
Water Level after Sampl. [m BD]	1.37	[m BGL] 0.71	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH13		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.66	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 12:16	2022-11-17 12:19	2022-11-17 12:22	2022-11-17 12:25	2022-11-17 12:28	2022-11-17 12:30
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.34	8.34	8.34	8.34	8.34	8.34
Depth to Water [m BD]	1.37	1.37	1.37	1.37	1.37	1.37
Depth to Water [m BGL]	0.71	0.71	0.71	0.71	0.71	0.71
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.31	7.30	7.29	7.29	7.28	7.28
Electrical Conductivity [µS/cm]	1472	1474	1473	1472	1472	1474
Dissolved Oxygen [%]	19.6	19.2	18.6	18.9	18.4	18.2
Dissolved Oxygen [mg/l]	2.12	2.10	1.97	1.96	1.94	1.91
Redox Potential Eh [mV]	-46.3	-48.4	-49.1	-50.8	-51.6	-52.3
Total Dissolved Solids [ppm]	1287.00	1287.00	1287.0	1287.00	1287.00	1287.0
Water Temperature [°C]	11.6	11.6	11.6	11.6	11.6	11.6
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:27:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.16 [m BGL] 0.50
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	9.33 [m BGL] 8.67

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, slight metallic eggy pdour		
Time Completed	15:15:00		ID	F - EYGHYB - VU9T		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.34	Number/Round	3		
Water Level after Sampl. [m BD]	1.16	[m BGL] 0.50	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation		External Courier			
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Monitoring Point	01	Date
Tip Depth [m]	10.00	Operator
Monitoring Round No	3	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.66

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 14:44	2022-11-29 14:47	2022-11-29 14:50	2022-11-29 14:53	2022-11-29 14:56	2022-11-29 14:59
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.34	8.34	8.34	8.34	8.34	8.34
Depth to Water [m BD]	1.16	1.16	1.16	1.16	1.16	1.16
Depth to Water [m BGL]	0.50	0.50	0.50	0.50	0.50	0.50
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.09	7.10	7.10	7.10	7.10	7.10
Electrical Conductivity [µS/cm]	1426	1421	1420	1421	1418	1416
Dissolved Oxygen [%]	16.7	15.4	14.8	14.4	14.0	13.7
Dissolved Oxygen [mg/l]	1.82	1.68	1.60	1.51	1.50	1.46
Redox Potential Eh [mV]	-58.6	-59.3	-59.9	-60.6	-61.2	-61.8
Total Dissolved Solids [ppm]	1267.50	1267.50	1267.50	1267.50	1261.00	1261.00
Water Temperature [°C]	11	11	11	11	11	11
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH13
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:50:00
Datum	Cover Level	Datum to GL [m]	0.66
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.16 [m BGL] 0.50
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	9.35 [m BGL] 8.69

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	29	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown, eggy odour		
Time Completed	12:45:00		ID	F-I3Z8ZB-IJ37		
Depth of Sampling Point [m BD]	9.00	[m BGL] 8.34	Number/Round	5		
Water Level after Sampl. [m BD]	1.16	[m BGL] 0.50	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH13		
Monitoring Point	01	Date	Wednesday 2022-12-14	
Tip Depth [m]	10.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.66	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 12:17	2022-12-14 12:20	2022-12-14 12:24	2022-12-14 12:27	2022-12-14 12:30	2022-12-14 12:33
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	9.00	9.00	9.00	9.00	9.00	9.00
Depth to Sampling Point [m BGL]	8.34	8.34	8.34	8.34	8.34	8.34
Depth to Water [m BD]	1.16	1.16	1.16	1.16	1.16	1.16
Depth to Water [m BGL]	0.50	0.50	0.50	0.50	0.50	0.50
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.13	7.13	7.11	7.12	7.12	7.12
Electrical Conductivity [µS/cm]	1181	1185	1213	1220	1226	1224
Dissolved Oxygen [%]	12.0	10.0	6.9	6.6	6.2	6.0
Dissolved Oxygen [mg/l]	1.36	1.13	0.78	0.73	0.72	0.69
Redox Potential Eh [mV]	-20.2	-31.3	-42.8	-44.5	-46.4	-49.1
Total Dissolved Solids [ppm]	1092.00	1092.00	1118.00	1124.50	1124.50	1224.50
Water Temperature [°C]	9.5	9.5	9.5	9.5	9.5	9.5
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during	during	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-08	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:24:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	2.22 [m BGL] 1.46
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.83 [m BGL] 6.07

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	32	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	95	1st	11:47:18	3.08	2.32	32
Depth of Purging Point [m BD]	6.00 [m BGL] 5.24	2nd	12:02:08	2.90	2.14	64
Equipment/Method	Waterra pump	3rd	12:15:41	4.89	4.13	96
Total Volume Purged (Actual) [litres]	96	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	na	Description Silty, slightly sandy, dense light brown.				
Time Completed	12:25:00	ID				
Depth of Sampling Point [m BD]	6.00 [m BGL] 5.24	Number/Round 0				
Water Level after Sampl. [m BD]	4.89 [m BGL] 4.13	Containers 0 x 1l Glass Bottle				
		0 x 1l Plastic Bottle				
Volume Sampled [litres]	0	0 x Vial				
Remarks	Rising head test completed after development. Borehole base 6.37m after development.	Transportation				
		CoC Number				
		Storage				
		Preservation/Filtration				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH17		
Monitoring Point	01	Date	Tuesday 2022-11-08
Tip Depth [m]	6.00	Operator	NR CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.76

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	10:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	10:00:00	00:00:00	00:00:00
Conductivity	18C100297	10:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-08 11:47	2022-11-08 12:02	2022-11-08 12:15			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	6.00	6.00	6.00			
Depth to Sampling Point [m BGL]	5.24	5.24	5.24			
Depth to Water [m BD]	3.08	3.90	4.89			
Depth to Water [m BGL]	2.32	3.14	4.13			
Cumulative Volume Purged Prior to Test [l]	32	64	96			
pH Value	7.20	7.07	6.99			
Electrical Conductivity [μ S/cm]	437.0	418.3	396.4			
Dissolved Oxygen [%]	1.9	1.4	1.7			
Dissolved Oxygen [mg/l]	0.19	0.14	0.18			
Redox Potential Eh [mV]	-122.9	-120.2	-121.1			
Total Dissolved Solids [ppm]	362.05	345.80	335.40			
Water Temperature [°C]	13.7	13.6	12.8			
Ambient Temperature [°C]	11	11	11			
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:42:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.97 [m BGL] 1.21
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.35 [m BGL] 5.59

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	slightly cloudy, evgy odour		
Time Completed	14:30:00		ID	F-5T8VXB-FJZZ		
Depth of Sampling Point [m BD]	6.00	[m BGL] 5.24	Number/Round	1		
Water Level after Sampl. [m BD]	1.87	[m BGL] 1.11	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage	Coolbox		
			Preservation/Filtration	Temperature		

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH17		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.76	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 14:01	2022-11-17 14:04	2022-11-17 14:07	2022-11-17 14:10	2022-11-17 14:13	2022-11-17 14:16
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.24	5.24	5.24	5.24	5.24	5.24
Depth to Water [m BD]	1.97	1.97	1.97	1.97	1.97	1.97
Depth to Water [m BGL]	1.21	1.21	1.21	1.21	1.21	1.21
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.17	7.17	7.17	7.18	7.18	7.18
Electrical Conductivity [µS/cm]	438.1	435.0	432.2	431.8	432.0	431.9
Dissolved Oxygen [%]	17.9	16.8	16.0	15.4	15.0	14.5
Dissolved Oxygen [mg/l]	1.89	1.75	1.67	1.61	1.56	1.50
Redox Potential Eh [mV]	-25.3	-27.3	-28.9	-30.2	-32.0	-33.7
Total Dissolved Solids [ppm]	374.00	371.80	369.85	369.20	369.50	369.20
Water Temperature [°C]	12.5	12.5	12.5	12.5	12.5	12.5
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:12:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.69 [m BGL] 0.93
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.34 [m BGL] 5.58

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, slight yellow		
Time Completed	10:50:00		ID	F-ULTKYB-QFNK		
Depth of Sampling Point [m BD]	6.00	[m BGL] 5.24	Number/Round	3		
Water Level after Sampl. [m BD]	1.69	[m BGL] 0.93	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Monitoring Point	01	Date
Tip Depth [m]	6.00	Operator
Monitoring Round No	3	Skills Card
Datum	Cover Level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C10029	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 10:28	2022-12-01 10:31	2022-12-01 10:34	2022-12-01 10:37	2022-12-01 10:40	2022-12-01 10:43
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.24	5.24	5.24	5.24	5.24	5.24
Depth to Water [m BD]	1.69	1.69	1.69	1.69	1.69	1.69
Depth to Water [m BGL]	0.93	0.93	0.93	0.93	0.93	0.93
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.52	7.52	7.52	7.53	7.53	7.52
Electrical Conductivity [µS/cm]	1197	1200	1205	1204	1202	1208
Dissolved Oxygen [%]	22.3	20.1	18.7	18.3	16.9	16.6
Dissolved Oxygen [mg/l]	2.40	2.17	1.95	1.91	1.76	1.72
Redox Potential Eh [mV]	-125.3	-127.3	-130.8	-132.2	-134.5	-135.7
Total Dissolved Solids [ppm]	1046.50	1046.50	1053.00	1053.00	1053.00	1059.50
Water Temperature [°C]	11.6	11.6	11.6	11.6	11.6	11.6
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:04:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.65 [m BGL] 0.89
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	6.35 [m BGL] 5.59

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge		
Time Completed	10:50:00		ID	F-KWV8ZB-AEBT		
Depth of Sampling Point [m BD]	6.00	[m BGL] 5.24	Number/Round	5		
Water Level after Sampl. [m BD]	1.65	[m BGL] 0.89	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH17
Monitoring Point	01	Date
Tip Depth [m]	6.00	Operator
Monitoring Round No	5	Skills Card
Datum	Cover Level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 10:21	2022-12-14 10:24	2022-12-14 10:27	2022-12-14 10:30	2022-12-14 10:34	2022-12-14 10:37
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	6.00	6.00	6.00	6.00	6.00	6.00
Depth to Sampling Point [m BGL]	5.24	5.24	5.24	5.24	5.24	5.24
Depth to Water [m BD]	1.65	1.65	1.65	1.65	1.65	1.65
Depth to Water [m BGL]	0.89	0.89	0.89	0.89	0.89	0.89
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.15	7.14	7.14	7.15	7.15	7.15
Electrical Conductivity [µS/cm]	1291	1288	1286	1288	1289	1292
Dissolved Oxygen [%]	9.1	8.5	8.2	8.0	7.8	7.7
Dissolved Oxygen [mg/l]	1.02	0.94	0.90	0.88	0.85	0.83
Redox Potential Eh [mV]	-36.5	-41.9	-44.2	-46.6	-49.7	-52.1
Total Dissolved Solids [ppm]	1170.00	1170.00	1163.50	1170.00	1170.00	1170.00
Water Temperature [°C]	10.3	10.3	10.3	10.3	10.3	10.3
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Operator	CM	
Skills Card		
Date	Monday 2022-10-24	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:19:12
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.89 [m BGL] 1.13
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.35 [m BGL] 4.59

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	19	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	4			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	74	1st	16:20:21	3.10	2.34	19
Depth of Purging Point [m BD]	4.50 [m BGL] 3.74	2nd	16:46:07	3.50	2.74	38
Equipment/Method	Waterra	3rd	16:54:39	2.79	2.03	56
Total Volume Purged (Actual) [litres]	74	4th	17:09:30	2.61	1.85	74
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description Dark brown, very sandy no odour				
Time Completed	17:24:33	ID				
Depth of Sampling Point [m BD]	4.50 [m BGL] 3.74	Number/Round 0				
Water Level after Sampl. [m BD]	2.12 [m BGL] 1.36	Containers		0	x 1l Glass Bottle	
Volume Sampled [litres]	0			0	x 1l Plastic Bottle	
Remarks			0		x Vial	
	Transportation					-
	CoC Number					-
	Storage					-
Preservation/Filtration					-	

GENERAL REMARKS
<p>Well development only, no sample taken.</p> <p>Very sandy base</p> <p>Depth to base after 1st well volume 6.58m Base 6.16m 16:42</p> <p>Depth to base after 2nd well volume 6.41m 16:46</p> <p>Depth to base after 3rd well volume 6.28m 16:54</p> <p>Depth to base after 4th well volume 6.44m 17:09</p> <p>Last base recorded before leaving 6.17m 17:24</p> <p>Fluctuating base levels throughout well development</p>



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH19	
Monitoring Point	01	Date	Monday 2022-10-24
Tip Depth [m]	6.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.76

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓	✓		
Date/Time	2022-10-24 16:20	2022-10-24 16:46	2022-10-24 16:54	2022-10-24 17:09		
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample		
Depth to Sampling Point [m BD]	4.50	4.50	4.50	4.50		
Depth to Sampling Point [m BGL]	3.74	3.74	3.74	3.74		
Depth to Water [m BD]	3.10	3.50	2.79	2.61		
Depth to Water [m BGL]	2.34	2.74	2.03	1.85		
Cumulative Volume Purged Prior to Test [l]	19	38	56	74		
pH Value	6.79	6.77	6.70	6.74		
Electrical Conductivity [µS/cm]	1771	1488	1451	1443		
Dissolved Oxygen [%]	3.1	3.0	2.8	2.7		
Dissolved Oxygen [mg/l]	0.33	0.32	3.0	0.29		
Redox Potential Eh [mV]	-80.8	-81.2	-81.7	-82.8		
Total Dissolved Solids [ppm]	1508.00	1280.50	1033.50	1157.00		
Water Temperature [°C]	12.6	11.9	11.9	11.9		
Ambient Temperature [°C]	13.0	13.0	13.0	13.0		
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during		



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Operator	NRCM	
Skills Card		
Date	Monday 2022-11-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:15:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.77 [m BGL] 1.01
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.81 [m BGL] 5.05

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	23	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Light brown colour, no odour, thick fine sands and silts.		
Time Completed	15:00:00		ID	F - A7NPXB - 0AU2		
Depth of Sampling Point [m BD]	5.50	[m BGL] 4.74	Number/Round	1		
Water Level after Sampl. [m BD]	1.77	[m BGL] 1.01	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH19		
Monitoring Point	01	Date	Monday 2022-11-14
Tip Depth [m]	0.00	Operator	NR CM
Monitoring Round No	1	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.76

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	14:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	14:00:00	00:00:00	00:00:00
Conductivity	18C100297	14:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-14 14:32	2022-11-14 14:35	2022-11-14 14:38	2022-11-14 14:41	2022-11-14 14:44	2022-11-14 14:47
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	5.50	5.50	5.50	5.50	5.50	5.50
Depth to Sampling Point [m BGL]	4.74	4.74	4.74	4.74	4.74	4.74
Depth to Water [m BD]	1.77	1.77	1.77	1.77	1.77	1.77
Depth to Water [m BGL]	1.01	1.01	1.01	1.01	1.01	1.01
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.92	6.88	6.81	6.78	6.76	6.75
Electrical Conductivity [µS/cm]	973	1010	999	1002	1001	1004
Dissolved Oxygen [%]	14.2	12.1	10.8	10.4	10.0	9.8
Dissolved Oxygen [mg/l]	1.52	1.29	1.16	1.10	1.18	1.12
Redox Potential Eh [mV]	-43.3	-53.3	-63.4	-69.0	-73.2	-76.9
Total Dissolved Solids [ppm]	851.50	877.50	871.00	871.00	871.00	871.00
Water Temperature [°C]	11.9	11.8	11.8	11.8	11.8	11.8
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Operator	NR CM	
Skills Card		
Date	Monday 2022-11-28	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:10:00
Datum	Cover Level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.44 [m BGL] 0.68
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.47 [m BGL] 4.71

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	21	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy brown of silts		
Time Completed	15:00:00		ID	F-Q3KFYB-3DBH		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.24	Number/Round	3		
Water Level after Sampl. [m BD]	1.44	[m BGL] 0.68	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Monitoring Point	01	Date
Tip Depth [m]	6.00	Operator
Monitoring Round No	3	Skills Card
Datum	Cover Level	Datum to GL [m]
		0.76

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	12:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	12:00:00	00:00:00	00:00:00
Conductivity	18C100297	12:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-28 14:28	2022-11-28 14:31	2022-11-28 14:34	2022-11-28 14:37	2022-11-28 14:40	2022-11-28 14:43
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.24	4.24	4.24	4.24	4.24	4.24
Depth to Water [m BD]	1.44	1.44	1.44	1.44	1.44	1.44
Depth to Water [m BGL]	0.68	0.68	0.68	0.68	0.68	0.68
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.90	6.89	6.88	6.87	6.87	6.87
Electrical Conductivity [μ S/cm]	1109	1133	1130	1131	1128	1124
Dissolved Oxygen [%]	10.8	10.5	10.4	10.2	10.0	9.9
Dissolved Oxygen [mg/l]	1.19	1.15	1.13	1.10	1.08	1.06
Redox Potential Eh [mV]	-64.2	-64.4	-64.8	-65.0	-65.1	-65.4
Total Dissolved Solids [ppm]	981.50	1001.00	1001.00	1001.00	1001.00	994.50
Water Temperature [°C]	11.1	11.1	11.1	11.1	11.1	11.1
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH19
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:04:00
Datum	Ground level	Datum to GL [m]	0.76
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.24 [m BGL] 0.48
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.33 [m BGL] 4.57

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	20	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slight yellow, eggy odour.		
Time Completed	10:00:00		ID	F-M407ZB-9PZY		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.24	Number/Round	5		
Water Level after Sampl. [m BD]	1.24	[m BGL] 0.48	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH19		
Monitoring Point	01	Date	Tuesday 2022-12-13	
Tip Depth [m]	6.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Ground level	Datum to GL [m]	0.76	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 09:25	2022-12-13 09:28	2022-12-13 09:31	2022-12-13 09:34	2022-12-13 09:37	2022-12-13 09:40
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.24	4.24	4.24	4.24	4.24	4.24
Depth to Water [m BD]	1.24	1.24	1.24	1.24	1.24	1.24
Depth to Water [m BGL]	0.48	0.48	0.48	0.48	0.48	0.48
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.88	6.88	6.88	6.88	6.88	6.87
Electrical Conductivity [µS/cm]	1010	1011	1012	1011	1109	1109
Dissolved Oxygen [%]	34.5	33.2	31.7	30.6	29.9	29.0
Dissolved Oxygen [mg/l]	3.67	3.53	3.39	3.30	3.28	3.22
Redox Potential Eh [mV]	-83.0	-82.4	-81.9	-81.3	-80.8	-80.5
Total Dissolved Solids [ppm]	949.00	949.00	949.00	949.00	949.00	949.00
Water Temperature [°C]	8.8	8.8	8.8	8.8	8.8	8.8
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	CM	
Skills Card		
Date	Wednesday 2022-10-19	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:01:29
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	146	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	2.15 [m BGL] 1.43
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	10.50 [m BGL] 9.78

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	19	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	5			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	96	1st	13:22:15	2.18	1.46	19
Depth of Purging Point [m BD]	10.00 [m BGL] 9.28	2nd	14:11:25	2.18	1.46	38
Equipment/Method	Waterra	3rd	14:23:32	2.18	1.46	57
Total Volume Purged (Actual) [litres]	96	4th	14:36:28	2.18	1.46	76
One Screen Volume [litres]	6	5th	14:46:46	3.34	2.62	96

SAMPLING DETAILS							
Equipment/Method	N/A	Description					Very sandy, brown colour, no odour
Time Completed	16:17:31	ID					
Depth of Sampling Point [m BD]	10.00 [m BGL] 9.28	Number/Round					0
Water Level after Sampl. [m BD]	2.27 [m BGL] 1.55	Containers					0 x 1l Glass Bottle 0 x 1l Plastic Bottle 0 x Vial
Volume Sampled [litres]	0	Remarks					Transportation - CoC Number - Storage - Preservation/Filtration -

GENERAL REMARKS
Well development only, no sample taken



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH20		
Monitoring Point	01	Date	Wednesday 2022-10-19	
Tip Depth [m]	12.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓	✓	✓	
Date/Time	2022-10-19 13:22	2022-10-19 14:11	2022-10-19 14:23	2022-10-19 14:36	2022-10-19 14:46	
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	
Depth to Sampling Point [m BGL]	9.28	9.28	9.28	9.28	9.28	
Depth to Water [m BD]	2.18	2.18	2.18	2.18	3.34	
Depth to Water [m BGL]	1.46	1.46	1.46	1.46	2.62	
Cumulative Volume Purged Prior to Test [l]	19	38	57	76	96	
pH Value	7.26	7.35	7.35	7.31	7.27	
Electrical Conductivity [µS/cm]	2039	1867	1582	1564	1534	
Dissolved Oxygen [%]	14.4	5.3	6.4	6.2	6.0	
Dissolved Oxygen [mg/l]	1.56	0.57	0.69	0.66	0.63	
Redox Potential Eh [mV]	-67.0	-48.4	-82.2	-84.5	-84.9	
Total Dissolved Solids [ppm]	1800.50	1612.00	1384.50	1384.50	1384.50	
Water Temperature [°C]	11.3	12.0	11.2	11.2	11.2	
Ambient Temperature [°C]	14.0	14.0	14.0	14.0	14.0	
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during	during	



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:01:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.92 [m BGL] 1.20
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	8.35 [m BGL] 7.63

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	3	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, no odour.		
Time Completed	09:50:00		ID	F - PDVUXB - V838		
Depth of Sampling Point [m BD]	8.00	[m BGL] 7.28	Number/Round	1		
Water Level after Sampl. [m BD]	1.92	[m BGL] 1.20	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation		External Courier			
	CoC Number					
	Storage		Coolbox			
	Preservation/Filtration		Temperature			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH20		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 10:22	2022-11-17 10:22	2022-11-17 10:22	2022-11-17 10:22	2022-11-17 10:22	2022-11-17 10:22
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.28	7.28	7.28	7.28	7.28	7.28
Depth to Water [m BD]	1.92	1.92	1.92	1.92	1.92	1.92
Depth to Water [m BGL]	1.20	1.20	1.20	1.20	1.20	1.20
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.47	7.43	7.41	7.40	7.40	7.39
Electrical Conductivity [µS/cm]	1427	1436	1445	1449	1453	1454
Dissolved Oxygen [%]	19.5	18.4	17.8	17.4	17.0	16.3
Dissolved Oxygen [mg/l]	2.11	1.92	1.85	1.80	1.78	1.69
Redox Potential Eh [mV]	3.5	1.1	-1.2	-4.2	-9.3	-11.1
Total Dissolved Solids [ppm]	1248.00	1248.00	1261.00	1261.00	1267.50	1267.50
Water Temperature [°C]	11.7	11.7	11.7	11.7	11.7	11.7
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:12:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.67 [m BGL] 0.95
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	8.33 [m BGL] 7.61

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	3	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge, eggy odour.		
Time Completed	10:00:00		ID	F-2X5HYB-GOBX		
Depth of Sampling Point [m BD]	8.00	[m BGL] 7.28	Number/Round	3		
Water Level after Sampl. [m BD]	1.67	[m BGL] 0.95	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH20		
Monitoring Point	01	Date	Tuesday 2022-11-29
Tip Depth [m]	12.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.72

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 09:28	2022-11-29 09:31	2022-11-29 09:34	2022-11-29 09:37	2022-11-29 09:40	2022-11-29 09:43
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.28	7.28	7.28	7.28	7.28	7.28
Depth to Water [m BD]	1.67	1.67	1.67	1.67	1.67	1.67
Depth to Water [m BGL]	0.95	0.95	0.95	0.95	0.95	0.95
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.34	7.33	7.33	7.32	7.32	7.32
Electrical Conductivity [µS/cm]	1572	1580	1585	1587	1590	1592
Dissolved Oxygen [%]	14.8	13.0	12.6	12.0	11.8	11.3
Dissolved Oxygen [mg/l]	1.60	1.46	1.35	1.30	1.28	1.18
Redox Potential Eh [mV]	-43.3	-45.8	-46.9	-48.2	-49.0	-49.8
Total Dissolved Solids [ppm]	1384.50	1391.00	1397.50	1404.00	1404.00	1404.00
Water Temperature [°C]	11.2	11.2	11.2	11.2	11.2	11.2
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH20
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:21:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	9.00	Standing Water [m BD]	1.68 [m BGL] 0.96
Response Zone Base [m BGL]	12.00	Standpipe Base Depth [m BD]	8.33 [m BGL] 7.61

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	3	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour.		
Time Completed	14:00:00		ID	F-KJA7ZB-8S33		
Depth of Sampling Point [m BD]	8.00	[m BGL] 7.28	Number/Round	5		
Water Level after Sampl. [m BD]	1.68	[m BGL] 0.96	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	32		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH20		
Monitoring Point	01	Date	Tuesday 2022-12-13	
Tip Depth [m]	12.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 13:35	2022-12-13 13:38	2022-12-13 13:41	2022-12-13 13:44	2022-12-13 13:47	2022-12-13 13:50
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.28	7.28	7.28	7.28	7.28	7.28
Depth to Water [m BD]	1.68	1.68	1.68	1.68	1.68	1.68
Depth to Water [m BGL]	0.96	0.96	0.96	0.96	0.96	0.96
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.06	7.06	7.06	7.06	7.06	7.06
Electrical Conductivity [µS/cm]	1607	1614	1617	1618	1620	1622
Dissolved Oxygen [%]	24.9	24.1	23.6	23.2	22.8	22.5
Dissolved Oxygen [mg/l]	2.77	2.66	2.60	2.55	2.51	2.47
Redox Potential Eh [mV]	-99.1	-113.T	-117.7	-119.9	-121.4	-123.0
Total Dissolved Solids [ppm]	1456.00	1462.50	1462.60	1462.50	1469.00	1469.00
Water Temperature [°C]	10.2	10.2	10.2	10.2	10.2	10.2
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-25	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:52:22
Datum	Ground level	Datum to GL [m]	0.28
Borehole Diameter [mm]	146	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	14.50	Standing Water [m BD]	1.50 [m BGL] 1.22
Response Zone Base [m BGL]	17.50	Standpipe Base Depth [m BD]	17.01 [m BGL] 16.73

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	39	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	116	1st	13:39:29	2.00	1.72	39
Depth of Purging Point [m BD]	16.00 [m BGL] 15.72	2nd	13:49:57	2.04	1.76	78
Equipment/Method	Waterra	3rd	14:01:59	2.01	1.73	117
Total Volume Purged (Actual) [litres]	117	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Light brown/orange colour, no odour			
Time Completed	14:22:49	ID				
Depth of Sampling Point [m BD]	16.00 [m BGL] 15.72	Number/Round	0			
Water Level after Sampl. [m BD]	1.53 [m BGL] 1.25	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	-				
	CoC Number	-				
	Storage	-				
	Preservation/Filtration	-				

GENERAL REMARKS
Well development only, no sample taken. Standpipe is above headworks, bung was flush to top of standpipe. Unable to put in gas tap. base after 3 well volumes 16.95m



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Monitoring Point	01	Date
Tip Depth [m]	17.50	Operator
Monitoring Round No	0	Skills Card
Datum	Ground level	Datum to GL [m]

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-25 13:39	2022-10-25 13:49	2022-10-25 14:02			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	16.00	16.00	16.00			
Depth to Sampling Point [m BGL]	15.72	15.72	15.72			
Depth to Water [m BD]	2.00	2.04	2.01			
Depth to Water [m BGL]	1.72	1.76	1.73			
Cumulative Volume Purged Prior to Test [l]	39	78	117			
pH Value	7.25	7.17	7.15			
Electrical Conductivity [µS/cm]	1409	1426	1417			
Dissolved Oxygen [%]	9.4	8.8	8.7			
Dissolved Oxygen [mg/l]	1.03	0.96	0.95			
Redox Potential Eh [mV]	-38.1	-40.4	-47.5			
Total Dissolved Solids [ppm]	1235.00	1261.00	1254.50			
Water Temperature [°C]	11.6	11.6	11.6			
Ambient Temperature [°C]	11.0	11.0	11.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:08:00
Datum	Cover Level	Datum to GL [m]	0.28
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	14.50	Standing Water [m BD]	1.28 [m BGL] 1.00
Response Zone Base [m BGL]	17.50	Standpipe Base Depth [m BD]	16.96 [m BGL] 16.68

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	47	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, strong eggy smell.		
Time Completed	15:50:00		ID	F-4JETXB-U8XK		
Depth of Sampling Point [m BD]	16.00	[m BGL] 15.72	Number/Round	1		
Water Level after Sampl. [m BD]	1.28	[m BGL] 1.00	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC MS-BH21
Monitoring Point	01
Tip Depth [m]	0.00
Monitoring Round No	1
Datum	Cover Level

In Situ Water Fieldsheet

Date	Wednesday 2022-11-16
Operator	NR CM
Skills Card	
Datum to GL [m]	0.28

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 15:24	2022-11-16 15:27	2022-11-16 15:30	2022-11-16 15:33	2022-11-16 15:36	2022-11-16 15:39
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	16.00	16.00	16.00	16.00	16.00	16.00
Depth to Sampling Point [m BGL]	15.72	15.72	15.72	15.72	15.72	15.72
Depth to Water [m BD]	1.28	1.28	1.28	1.28	1.28	1.28
Depth to Water [m BGL]	1.00	1.00	1.00	1.00	1.00	1.00
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.85	6.87	6.88	6.89	6.90	6.90
Electrical Conductivity [µS/cm]	1438	1446	1450	1454	1456	1459
Dissolved Oxygen [%]	13.8	11.8	10.7	9.8	8.8	7.5
Dissolved Oxygen [mg/l]	1.49	1.25	1.16	1.05	0.93	0.80
Redox Potential Eh [mV]	44.4	37.3	34.4	31.2	29.5	27.8
Total Dissolved Solids [ppm]	1274.00	1280.50	1280.50	1287.00	1287.00	1293.50
Water Temperature [°C]	11.2	11.2	11.2	11.2	11.2	11.2
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:55:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	14.50	Standing Water [m BD]	1.40 [m BGL] 0.84
Response Zone Base [m BGL]	17.50	Standpipe Base Depth [m BD]	17.22 [m BGL] 16.66

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	47	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge, slight eggy odour.		
Time Completed	12:40:00		ID	F-D3CHYB-R2GV		
Depth of Sampling Point [m BD]	17.00	[m BGL] 16.44	Number/Round	3		
Water Level after Sampl. [m BD]	1.40	[m BGL] 0.84	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH21		
Monitoring Point	01	Date	Tuesday 2022-11-29
Tip Depth [m]	17.50	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.56

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-29 12:09	2022-11-29 12:12	2022-11-29 12:15	2022-11-29 12:18	2022-11-29 12:21	2022-11-29 12:24
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	17.00	17.00	17.00	17.00	17.00	17.00
Depth to Sampling Point [m BGL]	16.44	16.44	16.44	16.44	16.44	16.44
Depth to Water [m BD]	1.40	1.40	1.40	1.40	1.40	1.40
Depth to Water [m BGL]	0.84	0.84	0.84	0.84	0.84	0.84
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.09	7.08	7.08	7.08	7.07	7.07
Electrical Conductivity [µS/cm]	1094	1092	1196	1191	1195	1192
Dissolved Oxygen [%]	7.2	6.8	6.6	6.4	6.3	6.1
Dissolved Oxygen [mg/l]	0.78	0.71	0.69	0.66	0.65	0.63
Redox Potential Eh [mV]	-70.8	-73.7	-75.6	-77.2	-78.9	-80.0
Total Dissolved Solids [ppm]	1066.00	1066.00	1066.00	1066.00	1066.00	1066.00
Water Temperature [°C]	10.8	10.8	10.8	10.8	10.8	10.8
Ambient Temperature [°C]	8	8	8	8	8	8
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH21
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-12-13	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:40:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	14.50	Standing Water [m BD]	1.37
		[m BGL]	0.81
Response Zone Base [m BGL]	17.50	Standpipe Base Depth [m BD]	17.23
		[m BGL]	16.67

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	47	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow tinge, eggy odour.		
Time Completed	12:20:00		ID	F-X447ZB-8KPO		
Depth of Sampling Point [m BD]	17.00	[m BGL]	16.44	Number/Round	5	
Water Level after Sampl. [m BD]	1.37	[m BGL]	0.81	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH21		
Monitoring Point	01	Date	Tuesday 2022-12-13	
Tip Depth [m]	17.50	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-13 11:54	2022-12-13 11:57	2022-12-13 12:00	2022-12-13 12:03	2022-12-13 12:06	2022-12-13 12:09
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	17.00	17.00	17.00	17.00	17.00	17.00
Depth to Sampling Point [m BGL]	16.44	16.44	16.44	16.44	16.44	16.44
Depth to Water [m BD]	1.37	1.37	1.37	1.37	1.37	1.37
Depth to Water [m BGL]	0.81	0.81	0.81	0.81	0.81	0.81
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.69	6.70	6.70	6.70	6.70	6.70
Electrical Conductivity [µS/cm]	1410	1408	1406	1404	1404	1402
Dissolved Oxygen [%]	15.4	9.6	9.0	8.6	8.4	8.2
Dissolved Oxygen [mg/l]	1.67	1.09	1.01	0.96	0.95	0.92
Redox Potential Eh [mV]	-101.3	-107.5	-110.2	-112.7	-114.2	-115.9
Total Dissolved Solids [ppm]	1274.00	1274.00	1267.50	1267.50	1267.50	1267.50
Water Temperature [°C]	10.2	10.2	10.2	10.2	10.2	10.2
Ambient Temperature [°C]	0	0	0	0	0	0
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	MS-BH23
Operator	CM	
Skills Card		
Date	Thursday 2022-10-20	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:20:31
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	2.12
		[m BGL]	1.54
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	5.17
		[m BGL]	4.59

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	4			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	114	1st	14:07:29	2.16	1.58	28
Depth of Purging Point [m BD]	4.50	2nd	14:45:44	2.16	1.58	56
	[m BGL] 3.92					
Equipment/Method	Waterra	3rd	15:15:21	2.16	1.58	84
Total Volume Purged (Actual) [litres]	114	4th	15:45:05	2.16	1.58	114
One Screen Volume [litres]	10	5th				

SAMPLING DETAILS							
Equipment/Method	N/A	Description					Very sandy, brown colour, no odour
Time Completed	16:21:23	ID					
Depth of Sampling Point [m BD]	4.50	[m BGL]	3.92	Number/Round	0		
Water Level after Sampl. [m BD]	2.11	[m BGL]	1.53	Containers	0	x 1l Glass Bottle	
					0	x 1l Plastic Bottle	
Volume Sampled [litres]	0				0	x Vial	
Remarks	Transportation						-
	CoC Number						-
	Storage						-
	Preservation/Filtration						-

GENERAL REMARKS
Well development only, no sample taken. final base depth 3.48m



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP	MS-BH23		
Monitoring Point	01	Date	Thursday 2022-10-20	
Tip Depth [m]	6.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.58	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS	✓	✓	✓	✓		
Date/Time	2022-10-20 14:07	2022-10-20 14:45	2022-10-20 15:15	2022-10-20 15:45		
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample		
Depth to Sampling Point [m BD]	4.50	4.50	4.50	4.50		
Depth to Sampling Point [m BGL]	3.92	3.92	3.92	3.92		
Depth to Water [m BD]	2.16	2.16	2.16	2.16		
Depth to Water [m BGL]	1.58	1.58	1.58	1.58		
Cumulative Volume Purged Prior to Test [l]	28	56	84	114		
pH Value	7.17	7.19	7.13	7.11		
Electrical Conductivity [µS/cm]	1667	1708	1755	1742		
Dissolved Oxygen [%]	2.5	1.9	1.9	1.9		
Dissolved Oxygen [mg/l]	0.26	0.20	0.20	0.20		
Redox Potential Eh [mV]	-92.8	-95.6	-97.7	-100.1		
Total Dissolved Solids [ppm]	1397.50	1436.50	1436.50	1436.50		
Water Temperature [°C]	13.3	13.2	13.2	13.2		
Ambient Temperature [°C]	13.0	13.0	13.0	13.0		
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during	during		



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH23
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-17	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:46:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	0.59 [m BGL] 0.03
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	3.44 [m BGL] 2.88

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	19	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	10	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, no odour		
Time Completed	16:30:00		ID	F-2XBVXB-GUCE		
Depth of Sampling Point [m BD]	3.00	[m BGL] 2.44	Number/Round	1		
Water Level after Sampl. [m BD]	0.59	[m BGL] 0.03	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH23		
Monitoring Point	01	Date	Thursday 2022-11-17	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-17 16:03	2022-11-17 16:06	2022-11-17 16:09	2022-11-17 16:12	2022-11-17 16:15	2022-11-17 16:18
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	2.44	2.44	2.44	2.44	2.44	2.44
Depth to Water [m BD]	0.59	0.59	0.59	0.59	0.59	0.59
Depth to Water [m BGL]	0.03	0.03	0.03	0.03	0.03	0.03
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.01	7.01	7.02	7.02	7.02	7.02
Electrical Conductivity [µS/cm]	1411	1415	1414	1416	1414	1412
Dissolved Oxygen [%]	6.0	5.8	5.5	5.4	5.2	5.0
Dissolved Oxygen [mg/l]	0.64	0.62	0.57	0.56	0.54	0.51
Redox Potential Eh [mV]	-76.6	-78.4	-79.9	-81.3	-81.7	-82.2
Total Dissolved Solids [ppm]	1235.00	1235.00	1235.00	1235.00	1235.00	1235.00
Water Temperature [°C]	11.5	11.5	11.5	11.5	11.5	11.5
Ambient Temperature [°C]	9	9	9	9	9	9
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH23
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:59:00
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	1.01 [m BGL] 0.43
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	3.43 [m BGL] 2.85

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	18	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	10	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, slight yellow tinge, eggy smell		
Time Completed	11:45:00		ID	F - SUUKYB - GMCB		
Depth of Sampling Point [m BD]	3.00	[m BGL] 2.42	Number/Round	3		
Water Level after Sampl. [m BD]	1.01	[m BGL] 0.43	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Duplicate DUP-BH04 taken.		Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH23		
Monitoring Point	01	Date	Thursday 2022-12-01
Tip Depth [m]	6.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.58

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 11:15	2022-12-01 11:18	2022-12-01 11:21	2022-12-01 11:24	2022-12-01 11:27	2022-12-01 11:30
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	2.42	2.42	2.42	2.42	2.42	2.42
Depth to Water [m BD]	1.01	1.01	1.01	1.01	1.01	1.01
Depth to Water [m BGL]	0.43	0.43	0.43	0.43	0.43	0.43
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.25	7.24	7.25	7.24	7.24	7.24
Electrical Conductivity [µS/cm]	1619	1626	1628	1630	1633	1632
Dissolved Oxygen [%]	27.5	22.1	18.4	16.8	17.2	16.6
Dissolved Oxygen [mg/l]	3.01	2.43	1.99	1.80	1.81	1.74
Redox Potential Eh [mV]	-96.6	-97.4	-97.5	-98.2	-99.0	-99.7
Total Dissolved Solids [ppm]	1469.00	1475.50	1475.50	1482.00	1482.00	1482.00
Water Temperature [°C]	10.2	10.2	10.2	10.2	10.2	10.2
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH23
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:55:00
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	1.13 [m BGL] 0.55
Response Zone Base [m BGL]	6.00	Standpipe Base Depth [m BD]	3.43 [m BGL] 2.85

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	18	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	10	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, milky		
Time Completed	13:45:00		ID	F-QA49ZB-6DLI		
Depth of Sampling Point [m BD]	3.00	[m BGL] 2.42	Number/Round	5		
Water Level after Sampl. [m BD]	1.13	[m BGL] 0.55	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH23		
Monitoring Point	01	Date	Wednesday 2022-12-14	
Tip Depth [m]	6.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.58	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 13:17	2022-12-14 13:20	2022-12-14 13:24	2022-12-14 13:27	2022-12-14 13:30	2022-12-14 13:33
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	2.42	2.42	2.42	2.42	2.42	2.42
Depth to Water [m BD]	1.13	1.13	1.13	1.13	1.13	1.13
Depth to Water [m BGL]	0.55	0.55	0.55	0.55	0.55	0.55
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.16	7.17	7.17	7.16	7.16	7.16
Electrical Conductivity [µS/cm]	1324	1326	1327	1330	1332	1334
Dissolved Oxygen [%]	29.9	26.1	23.6	21.6	19.7	17.7
Dissolved Oxygen [mg/l]	3.40	3.09	2.76	2.49	2.22	2.08
Redox Potential Eh [mV]	-21.8	-25.6	-26.9	-27.9	-29.3	-29.7
Total Dissolved Solids [ppm]	1280.50	1287.00	1287.00	1287.00	1287.00	1293.50
Water Temperature [°C]	7.8	7.8	7.8	7.8	7.8	7.8
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH25
Operator	CM	
Skills Card		
Date	Friday 2022-10-21	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:07:17
Datum	Ground level	Datum to GL [m]	0.00
Borehole Diameter [mm]	250	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	2.18 [m BGL] 2.18
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	4.32 [m BGL] 4.32

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	20	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	59	1st	10:00:42	2.24	2.24	20
Depth of Purging Point [m BD]	3.80 [m BGL] 3.80	2nd	10:19:00	2.36	2.36	40
Equipment/Method	Waterra	3rd	10:37:33	1.96	1.96	60
Total Volume Purged (Actual) [litres]	60	4th				
One Screen Volume [litres]	4	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Very sandy brown colour, no odour			
Time Completed	10:39:53	ID				
Depth of Sampling Point [m BD]	3.80 [m BGL] 3.80	Number/Round	0			
Water Level after Sampl. [m BD]	1.96 [m BGL] 1.96	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks		Transportation	-			
		CoC Number	-			
		Storage	-			
		Preservation/Filtration	-			

GENERAL REMARKS
Well development only, no sample taken. base AFTER 1ST WELL VOLUME 3.91M base after 2nd well volume 3.68m base after 3rd well volume 3.22m



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	MS-BH25	
Monitoring Point	01	Date	Friday 2022-10-21
Tip Depth [m]	5.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Ground level	Datum to GL [m]	0.00

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C10097	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C10097	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C10097	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C10097			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-21 10:00	2022-10-21 10:18	2022-10-21 10:37			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	3.80	3.80	3.80			
Depth to Sampling Point [m BGL]	3.80	3.80	3.80			
Depth to Water [m BD]	2.24	2.36	1.96			
Depth to Water [m BGL]	2.24	2.36	1.96			
Cumulative Volume Purged Prior to Test [l]	20	40	60			
pH Value	6.99	6.93	6.92			
Electrical Conductivity [µS/cm]	1159	1190	1185			
Dissolved Oxygen [%]	8.2	8.0	7.6			
Dissolved Oxygen [mg/l]	0.86	0.83	0.79			
Redox Potential Eh [mV]	-66.4	-61.1	-60.3			
Total Dissolved Solids [ppm]	988.00	988.00	988.00			
Water Temperature [°C]	13.5	13.5	13.5			
Ambient Temperature [°C]	14.0	14.0	14.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH25
Operator	NR CM	
Skills Card		
Date	Friday 2022-11-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:36:00
Datum	Cover Level	Datum to GL [m]	0.00
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.54 [m BGL] 1.54
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	3.24 [m BGL] 3.24

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	5	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	4	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light brown, no odour		
Time Completed	11:15:00		ID	F - I6RWXB - XXKD		
Depth of Sampling Point [m BD]	3.00	[m BGL] 3.00	Number/Round	1		
Water Level after Sampl. [m BD]	1.54	[m BGL] 1.54	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP+RC	MS-BH25	
Monitoring Point	01	Date	Friday 2022-11-18
Tip Depth [m]	0.00	Operator	NR CM
Monitoring Round No	1	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.00

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-18 10:53	2022-11-18 10:56	2022-11-18 10:59	2022-11-18 11:02	2022-11-18 11:05	2022-11-18 11:08
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Water [m BD]	1.54	1.54	1.54	1.54	1.54	1.54
Depth to Water [m BGL]	1.54	1.54	1.54	1.54	1.54	1.54
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	8.32	8.33	8.34	8.36	8.37	8.38
Electrical Conductivity [µS/cm]	1402	1408	1416	1418	1420	1424
Dissolved Oxygen [%]	7.4	7.1	6.8	6.8	6.7	6.6
Dissolved Oxygen [mg/l]	0.78	0.75	0.71	0.70	0.69	0.68
Redox Potential Eh [mV]	-19.7	-24.8	-28.5	-31.3	-34.9	-36.9
Total Dissolved Solids [ppm]	1189.50	1196.00	1202.50	1202.50	1202.50	1209.00
Water Temperature [°C]	12.6	12.6	12.6	12.6	12.6	12.6
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH25
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:12:00
Datum	Ground level	Datum to GL [m]	0.00
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.56 [m BGL] 1.56
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	3.23 [m BGL] 3.23

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	5	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	4	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellowish brown, eggy smell.		
Time Completed	13:00:00		ID	F-Y5ZKYB-MX0G		
Depth of Sampling Point [m BD]	3.00	[m BGL] 3.00	Number/Round	3		
Water Level after Sampl. [m BD]	1.56	[m BGL] 1.56	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	MS-BH25		
Monitoring Point	01	Date	Thursday 2022-12-01	
Tip Depth [m]	5.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Ground level	Datum to GL [m]	0.00	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 12:28	2022-12-01 12:31	2022-12-01 12:34	2022-12-01 12:37	2022-12-01 12:40	2022-12-01 12:43
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Water [m BD]	1.56	1.56	1.56	1.56	1.56	1.56
Depth to Water [m BGL]	1.56	1.56	1.56	1.56	1.56	1.56
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	10.16	10.14	10.14	10.14	10.14	10.14
Electrical Conductivity [µS/cm]	1787	1786	1784	1777	1779	1780
Dissolved Oxygen [%]	26.2	24.5	22.7	23.4	21.9	20.5
Dissolved Oxygen [mg/l]	2.78	2.58	2.39	2.50	2.31	2.14
Redox Potential Eh [mV]	-139.1	-147.6	-152.4	-156.2	-159.8	-162.0
Total Dissolved Solids [ppm]	1521.00	1521.00	1521.00	1508.00	1514.50	1514.50
Water Temperature [°C]	12.5	12.5	12.5	12.5	12.5	12.5
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	MS-BH25
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:13:00
Datum	Ground level	Datum to GL [m]	0.00
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	3.00	Standing Water [m BD]	1.62 [m BGL] 1.62
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	3.23 [m BGL] 3.23

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	5	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	4	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellow, strong eggy odour.		
Time Completed	10:15:00		ID	F-CRRAZB-A6I8		
Depth of Sampling Point [m BD]	3.00	[m BGL] 3.00	Number/Round	5		
Water Level after Sampl. [m BD]	1.62	[m BGL] 1.62	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC MS-BH25		
Monitoring Point	01	Date	Thursday 2022-12-15
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Ground level	Datum to GL [m]	0.00

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 09:32	2022-12-15 09:35	2022-12-15 09:38	2022-12-15 09:41	2022-12-15 09:45	2022-12-15 09:48
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Sampling Point [m BGL]	3.00	3.00	3.00	3.00	3.00	3.00
Depth to Water [m BD]	1.62	1.62	1.62	1.62	1.62	1.62
Depth to Water [m BGL]	1.62	1.62	1.62	1.62	1.62	1.62
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.72	7.71	7.71	7.72	7.72	7.72
Electrical Conductivity [µS/cm]	1590	1583	1576	1572	1566	1560
Dissolved Oxygen [%]	8.7	8.5	7.9	8.6	8.4	8.2
Dissolved Oxygen [mg/l]	0.94	0.92	0.84	0.92	0.92	0.90
Redox Potential Eh [mV]	61.9	58.5	57.1	55.6	53.3	51.7
Total Dissolved Solids [ppm]	1371.50	1371.50	1365.00	1358.50	1358.50	1352.00
Water Temperature [°C]	12.0	12.0	12.0	12.0	12.0	12.0
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	BH101
Operator	CM	
Skills Card		
Date	Thursday 2022-10-27	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:28:36
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	250	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	16.91 [m BGL] 16.26
Response Zone Base [m BGL]	21.00	Standpipe Base Depth [m BD]	21.13 [m BGL] 20.48

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	113	1st	10:56:02	19.45	18.80	38
Depth of Purging Point [m BD]	20.00 [m BGL] 19.35	2nd	11:25:04	19.12	18.47	76
Equipment/Method	Waterra	3rd	11:34:13	19.02	18.37	114
Total Volume Purged (Actual) [litres]	114	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description Sandy brown colour, no odour				
Time Completed	11:37:24	ID				
Depth of Sampling Point [m BD]	20.00 [m BGL] 19.35	Number/Round 0				
Water Level after Sampl. [m BD]	19.02 [m BGL] 18.37	Containers 0 x 1l Glass Bottle				
Volume Sampled [litres]	0	0 x 1l Plastic Bottle				
		0 x Vial				
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Well development only, no sample taken.



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	BH101
Monitoring Point	01	
Tip Depth [m]	21.00	
Monitoring Round No	0	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Thursday 2022-10-27	
Operator	CM	
Skills Card		
Datum to GL [m]	0.65	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-27 10:56	2022-10-27 11:25	2022-10-27 11:34			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	20.00	20.00	20.00			
Depth to Sampling Point [m BGL]	19.35	19.35	19.35			
Depth to Water [m BD]	19.45	19.12	19.02			
Depth to Water [m BGL]	18.80	18.47	18.37			
Cumulative Volume Purged Prior to Test [l]	38	76	114			
pH Value	7.74	7.64	7.50			
Electrical Conductivity [µS/cm]	1641	1608	1632			
Dissolved Oxygen [%]	1.7	1.9	1.8			
Dissolved Oxygen [mg/l]	0.18	0.20	0.19			
Redox Potential Eh [mV]	-131.8	-134.4	-137.4			
Total Dissolved Solids [ppm]	1345.50	1345.50	1345.50			
Water Temperature [°C]	14.1	13.8	13.9			
Ambient Temperature [°C]	15.0	15.0	15.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH101
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:30:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	150	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	16.67 [m BGL] 16.02
Response Zone Base [m BGL]	21.00	Standpipe Base Depth [m BD]	20.34 [m BGL] 19.69

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	14	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watera		Description	Dark brown with fine silts, no odour.		
Time Completed	13:15:00		ID	F-8GERXB-YTP4		
Depth of Sampling Point [m BD]	19.00	[m BGL] 18.35	Number/Round	1		
Water Level after Sampl. [m BD]	16.67	[m BGL] 16.02	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	DUP-BH02 taken from location.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH101
Monitoring Point	01
Tip Depth [m]	0.00
Monitoring Round No	1
Datum	Cover Level

In Situ Water Fieldsheet

Date	Tuesday 2022-11-15
Operator	NR CM
Skills Card	
Datum to GL [m]	0.65

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-15 12:48	2022-11-15 12:51	2022-11-15 12:54	2022-11-15 12:57	2022-11-15 13:00	2022-11-15 13:03
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	19.00	19.00	19.00	19.00	19.00	19.00
Depth to Sampling Point [m BGL]	18.35	18.35	18.35	18.35	18.35	18.35
Depth to Water [m BD]	16.67	16.67	16.67	16.67	16.67	16.67
Depth to Water [m BGL]	16.02	16.02	16.02	16.02	16.02	16.02
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.74	9.73	9.73	9.72	9.72	9.72
Electrical Conductivity [µS/cm]	1426	1427	1429	1430	1432	1433
Dissolved Oxygen [%]	8.9	8.5	8.2	8.0	7.9	7.7
Dissolved Oxygen [mg/l]	0.96	0.90	0.85	0.84	0.81	0.79
Redox Potential Eh [mV]	-53.5	-51.5	-49.8	-48.2	-47.5	-46.1
Total Dissolved Solids [ppm]	1215.50	1215.50	1222.00	1222.00	1222.00	1222.00
Water Temperature [°C]	11.8	11.8	11.8	11.8	11.8	11.8
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH101
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-30	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:45:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	16.90 [m BGL] 16.25
Response Zone Base [m BGL]	21.00	Standpipe Base Depth [m BD]	20.22 [m BGL] 19.57

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	18	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow waterra		Description	Cloudy, light brown grey of silts and fine sand		
Time Completed	14:30:00		ID	F-9KAJYB-8PZ1		
Depth of Sampling Point [m BD]	19.00	[m BGL] 18.35	Number/Round	3		
Water Level after Sampl. [m BD]	16.90	[m BGL] 16.25	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC BH101		
Monitoring Point	01	Date	Wednesday 2022-11-30
Tip Depth [m]	21.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.65

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-30 14:51	2022-11-30 14:51	2022-11-30 14:51	2022-11-30 14:51	2022-11-30 14:51	2022-11-30 14:51
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	19.00	19.00	19.00	19.00	19.00	19.00
Depth to Sampling Point [m BGL]	18.35	18.35	18.35	18.35	18.35	18.35
Depth to Water [m BD]	16.90	16.90	16.90	16.90	16.90	16.90
Depth to Water [m BGL]	16.25	16.25	16.25	16.25	16.25	16.25
Cumulative Volume Purged Prior to Test [l]	2	3	4	5	6	7
pH Value	9.46	9.45	9.45	9.45	9.45	9.46
Electrical Conductivity [µS/cm]	1288	1289	1290	1292	1294	1290
Dissolved Oxygen [%]	29.5	26.8	28.0	30.1	25.7	26.8
Dissolved Oxygen [mg/l]	3.14	2.84	3.01	3.32	2.77	2.89
Redox Potential Eh [mV]	-5.1	-5.5	-6.2	-6.6	-6.9	-7.1
Total Dissolved Solids [ppm]	1137.50	1137.50	1337.50	1144.00	1144.00	1137.50
Water Temperature [°C]	11.2	11.2	11.2	11.2	11.2	11.2
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	during	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH101
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:31:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	150	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	16.87 [m BGL] 16.22
Response Zone Base [m BGL]	21.00	Standpipe Base Depth [m BD]	20.27 [m BGL] 19.62

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	13	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watera		Description	Cloudy light brown		
Time Completed	12:15:00		ID	F-X0WAZB-41YH		
Depth of Sampling Point [m BD]	19.00	[m BGL] 18.35	Number/Round	5		
Water Level after Sampl. [m BD]	16.87	[m BGL] 16.22	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	BH101		
Monitoring Point	01	Date	Thursday 2022-12-15	
Tip Depth [m]	21.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.65	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 12:30	2022-12-15 12:31	2022-12-15 12:31	2022-12-15 12:31	2022-12-15 12:31	2022-12-15 12:31
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	19.00	19.00	19.00	19.00	19.00	19.00
Depth to Sampling Point [m BGL]	18.35	18.35	18.35	18.35	18.35	18.35
Depth to Water [m BD]	16.87	16.87	16.87	16.87	16.87	16.87
Depth to Water [m BGL]	16.22	16.22	16.22	16.22	16.22	16.22
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	10.21	10.20	10.20	10.19	10.19	10.18
Electrical Conductivity [µS/cm]	1850	1861	1867	1870	1872	1876
Dissolved Oxygen [%]	13.2	12.9	12.7	12.4	12.1	11.9
Dissolved Oxygen [mg/l]	1.46	1.44	1.40	1.39	1.35	1.28
Redox Potential Eh [mV]	-30.9	-33.1	-35.2	-36.9	-38.1	-39.0
Total Dissolved Solids [ppm]	1670.50	1683.50	1690.00	1690.00	1896.50	1896.50
Water Temperature [°C]	10.1	10.1	10.1	10.1	10.1	10.1
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	BH102
Operator	CM	
Skills Card		
Date	Wednesday 2022-10-26	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:21:08
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	17.66 [m BGL] 16.94
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	30.16 [m BGL] 29.44

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	109	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	326	1st	11:55:29	19.87	19.15	109
Depth of Purging Point [m BD]	28.00 [m BGL] 27.28	2nd	12:34:37	19.86	19.14	218
Equipment/Method	Waterra	3rd	13:12:52	19.86	19.14	326
Total Volume Purged (Actual) [litres]	326	4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS							
Equipment/Method	N/A	Description					Light brown/orange colour, no odour
Time Completed	13:17:51	ID					
Depth of Sampling Point [m BD]	28.00 [m BGL] 27.28	Number/Round					0
Water Level after Sampl. [m BD]	19.81 [m BGL] 19.09	Containers					0 x 1l Glass Bottle 0 x 1l Plastic Bottle 0 x Vial
Volume Sampled [litres]	0	Remarks					Transportation - CoC Number - Storage - Preservation/Filtration -

GENERAL REMARKS
Well development only, no sample taken



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP	BH102	
Monitoring Point	01	Date	Wednesday 2022-10-26
Tip Depth [m]	30.00	Operator	CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.72

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-26 11:55	2022-10-26 12:34	2022-10-26 13:12			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	28.00	28.00	28.00			
Depth to Sampling Point [m BGL]	27.28	27.28	27.28			
Depth to Water [m BD]	19.87	19.86	19.86			
Depth to Water [m BGL]	19.15	19.14	19.14			
Cumulative Volume Purged Prior to Test [l]	109	218	326			
pH Value	8.28	8.13	8.10			
Electrical Conductivity [µS/cm]	1690	1708	1714			
Dissolved Oxygen [%]	3.8	3.6	3.5			
Dissolved Oxygen [mg/l]	0.38	0.36	0.36			
Redox Potential Eh [mV]	-53.9	-57.8	-60.4			
Total Dissolved Solids [ppm]	1352.00	1352.00	1352.00			
Water Temperature [°C]	15.1	15.1	15.1			
Ambient Temperature [°C]	18.0	18.0	18.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH102
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:30:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	17.44
		[m BGL]	16.72
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	29.98
		[m BGL]	29.26

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	108	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watterra		Description	Dark green of fine silts and sands, no odour.		
Time Completed	14:20:00		ID	F-2JIRXB-EYAT		
Depth of Sampling Point [m BD]	0.00	[m BGL]	-0.72	Number/Round	1	
Water Level after Sampl. [m BD]	17.44	[m BGL]	16.72	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	BH102		
Monitoring Point	01	Date	Tuesday 2022-11-15	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-15 13:51	2022-11-15 13:54	2022-11-15 13:57	2022-11-15 14:00	2022-11-15 14:03	2022-11-15 14:06
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	28.00	28.00	28.00	28.00	28.00	28.00
Depth to Sampling Point [m BGL]	27.28	27.28	27.28	27.28	27.28	27.28
Depth to Water [m BD]	17.44	17.44	17.44	17.44	17.44	17.44
Depth to Water [m BGL]	16.72	16.72	16.72	16.72	16.72	16.72
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.22	9.20	9.19	9.18	9.17	9.16
Electrical Conductivity [µS/cm]	1765	1775	1777	1778	180	1781
Dissolved Oxygen [%]	4.7	4.0	3.8	3.3	3.1	2.9
Dissolved Oxygen [mg/l]	0.52	0.46	0.43	0.36	0.33	0.30
Redox Potential Eh [mV]	-154.8	-159.4	-162.4	-165.6	-167.8	-170.8
Total Dissolved Solids [ppm]	1475.50	1488.50	1488.50	1488.00	1495.50	1495.50
Water Temperature [°C]	12	12	12	12	12	12
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP+RC	BH102	
Operator	NR CM		
Skills Card			
Date	Wednesday 2022-11-30		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:40:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	17.90 [m BGL] 17.18
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	29.83 [m BGL] 29.11

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	105	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watera		Description	Cloudy, deep green colour of silts and fine sands.		
Time Completed	15:20:00		ID	F-4BCJYB-39ZM		
Depth of Sampling Point [m BD]	28.00	[m BGL] 27.28	Number/Round	3		
Water Level after Sampl. [m BD]	17.90	[m BGL] 17.18	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC BH102		
Monitoring Point	01	Date	Wednesday 2022-11-30
Tip Depth [m]	30.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.72

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-30 14:54	2022-11-30 14:57	2022-11-30 15:00	2022-11-30 15:03	2022-11-30 15:06	2022-11-30 15:09
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	28.00	28.00	28.00	28.00	28.00	28.00
Depth to Sampling Point [m BGL]	27.28	27.28	27.28	27.28	27.28	27.28
Depth to Water [m BD]	17.90	17.90	17.90	17.90	17.90	17.90
Depth to Water [m BGL]	17.18	17.18	17.18	17.18	17.18	17.18
Cumulative Volume Purged Prior to Test [l]	2	3	4	5	6	7
pH Value	9.28	9.25	9.26	9.26	9.26	9.26
Electrical Conductivity [µS/cm]	1716	1718	1717	1720	1722	1718
Dissolved Oxygen [%]	25.8	22.3	24.9	28.5	24.9	21.8
Dissolved Oxygen [mg/l]	2.77	2.46	2.70	3.06	2.69	2.31
Redox Potential Eh [mV]	-1.1	-1.8	-2.2	-2.7	-3.0	-3.5
Total Dissolved Solids [ppm]	1443.00	1443.00	1449.50	1449.50	1449.50	1443.00
Water Temperature [°C]	13.2	13.2	13.2	13.2	13.2	13.2
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP+RC	BH102	
Operator	NR CM		
Skills Card			
Date	Thursday 2022-12-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:21:00
Datum	Cover Level	Datum to GL [m]	0.72
Borehole Diameter [mm]	150	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	17.11 [m BGL] 16.39
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	29.70 [m BGL] 28.98

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	68	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watterra		Description	Cloudy, brown green.		
Time Completed	13:10:00		ID	F-1GXAZB-A8EK		
Depth of Sampling Point [m BD]	28.00	[m BGL] 27.28	Number/Round	5		
Water Level after Sampl. [m BD]	17.11	[m BGL] 16.39	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	BH102		
Monitoring Point	01	Date	Thursday 2022-12-15	
Tip Depth [m]	30.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.72	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 12:34	2022-12-15 12:37	2022-12-15 12:40	2022-12-15 12:43	2022-12-15 12:46	2022-12-15 12:50
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	28.00	28.00	28.00	28.00	28.00	28.00
Depth to Sampling Point [m BGL]	27.28	27.28	27.28	27.28	27.28	27.28
Depth to Water [m BD]	17.11	17.11	17.11	17.11	17.11	17.11
Depth to Water [m BGL]	16.39	16.39	16.39	16.39	16.39	16.39
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.60	9.60	9.60	9.60	9.60	9.60
Electrical Conductivity [µS/cm]	2231	2233	2227	2223	2220	2218
Dissolved Oxygen [%]	5.2	5.4	5.1	5.6	5.3	5.0
Dissolved Oxygen [mg/l]	0.60	0.61	0.59	0.63	0.61	0.57
Redox Potential Eh [mV]	-85.7	-87.2	-88.1	-89.5	-90.3	-90.9
Total Dissolved Solids [ppm]	2034.50	2047.50	2054.50	2060.60	2060.50	2060.50
Water Temperature [°C]	10.0	10.0	10.0	10.0	10.0	10.0
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	BH103
Operator	CM	
Skills Card		
Date	Wednesday 2022-10-26	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:10:13
Datum	Cover Level	Datum to GL [m]	0.73
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	18.64 [m BGL] 17.91
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	26.90 [m BGL] 26.17

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	76	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	229	1st	14:39:55	20.83	20.10	81
Depth of Purging Point [m BD]	25.00 [m BGL] 24.27	2nd	14:55:57	20.68	19.95	162
Equipment/Method	Waterra	3rd	15:31:45	20.63	19.90	242
Total Volume Purged (Actual) [litres]	242	4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Brown colour, no odour, slightly sandy.			
Time Completed	16:55:31	ID				
Depth of Sampling Point [m BD]	25.00 [m BGL] 24.27	Number/Round	0			
Water Level after Sampl. [m BD]	20.63 [m BGL] 19.90	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	-				
	CoC Number	-				
	Storage	-				
	Preservation/Filtration	-				

GENERAL REMARKS
Well development only, no sample taken.



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP	BH103		
Monitoring Point	01	Date	Wednesday 2022-10-26	
Tip Depth [m]	30.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.73	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-26 14:39	2022-10-26 14:55	2022-10-26 15:31			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	25.00	25.00	25.00			
Depth to Sampling Point [m BGL]	24.27	24.27	24.27			
Depth to Water [m BD]	20.83	20.68	20.63			
Depth to Water [m BGL]	20.10	19.95	19.90			
Cumulative Volume Purged Prior to Test [l]	81	162	242			
pH Value	7.86	7.34	7.30			
Electrical Conductivity [µS/cm]	2082	2141	2021			
Dissolved Oxygen [%]	4.2	3.8	4.0			
Dissolved Oxygen [mg/l]	0.41	0.37	0.39			
Redox Potential Eh [mV]	-132.6	-137.7	-140.7			
Total Dissolved Solids [ppm]	1664.00	1664.00	1664.00			
Water Temperature [°C]	15.3	15.3	15.3			
Ambient Temperature [°C]	18.0	18.0	18.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH103
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:35:00
Datum	Cover Level	Datum to GL [m]	0.73
Borehole Diameter [mm]	150	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	18.75
		[m BGL]	18.02
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	27.64
		[m BGL]	26.91

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	52	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow waterra		Description	Dark green of fine silts and sand, no odour.		
Time Completed	15:30:00		ID	F-FZIRXB-JGTI		
Depth of Sampling Point [m BD]	27.00	[m BGL]	26.27	Number/Round	1	
Water Level after Sampl. [m BD]	18.75	[m BGL]	18.02	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	BH103		
Monitoring Point	01	Date	Tuesday 2022-11-15	
Tip Depth [m]	0.00	Operator	NR CM	
Monitoring Round No	1	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.73	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	00:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	00:00:00	00:00:00	00:00:00
Conductivity	18C100297	00:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-15 14:54	2022-11-15 14:57	2022-11-15 15:00	2022-11-15 15:04	2022-11-15 15:07	2022-11-15 15:10
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	27.00	27.00	27.00	27.00	27.00	27.00
Depth to Sampling Point [m BGL]	26.27	26.27	26.27	26.27	26.27	26.27
Depth to Water [m BD]	18.75	18.75	18.75	18.75	18.75	18.75
Depth to Water [m BGL]	18.02	18.02	18.02	18.02	18.02	18.02
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	8.56	8.54	8.54	8.53	8.53	8.52
Electrical Conductivity [µS/cm]	2200	2313	2321	2325	2324	2326
Dissolved Oxygen [%]	10.3	8.0	5.1	4.8	4.3	4.0
Dissolved Oxygen [mg/l]	1.10	0.82	0.53	0.52	0.45	0.41
Redox Potential Eh [mV]	-109.9	-167.5	-185.8	-188.4	-192.4	-195.1
Total Dissolved Solids [ppm]	1813.50	1904.50	1917.50	1917.50	1917.50	1917.50
Water Temperature [°C]	14	14	14	14	14	14
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH103
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-30	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:30:00
Datum	Cover Level	Datum to GL [m]	0.73
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	18.48 [m BGL] 17.75
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	26.98 [m BGL] 26.25

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	77	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow watera		Description	Cloudy, dark green of silts and fine sands.		
Time Completed	16:20:00		ID	F-4SDJYB-ER4V		
Depth of Sampling Point [m BD]	26.00	[m BGL] 25.27	Number/Round	3		
Water Level after Sampl. [m BD]	18.48	[m BGL] 17.75	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	BH103		
Monitoring Point	01	Date	Wednesday 2022-11-30	
Tip Depth [m]	30.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.73	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-30 15:48	2022-11-30 15:51	2022-11-30 15:54	2022-11-30 15:57	2022-11-30 16:00	2022-11-30 16:03
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	26.00	26.00	26.00	26.00	26.00	26.00
Depth to Sampling Point [m BGL]	25.27	25.27	25.27	25.27	25.27	25.27
Depth to Water [m BD]	18.48	18.48	18.48	18.48	18.48	18.48
Depth to Water [m BGL]	17.75	17.75	17.75	17.75	17.75	17.75
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	7
pH Value	8.83	8.80	8.79	8.79	8.79	8.79
Electrical Conductivity [µS/cm]	2029	2024	2026	2027	2033	2031
Dissolved Oxygen [%]	22.1	24.6	18.5	16.9	17.4	15.8
Dissolved Oxygen [mg/l]	2.42	2.68	1.99	1.82	1.88	1.69
Redox Potential Eh [mV]	-133.4	-131.6	-129.5	-127.9	-126.2	-125.4
Total Dissolved Solids [ppm]	1735.50	1729.00	1729.00	1729.00	1735.50	1735.50
Water Temperature [°C]	12.4	12.4	12.4	12.4	12.4	12.4
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP+RC	BH103	
Operator	NR CM		
Skills Card			
Date	Thursday 2022-12-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:17:00
Datum	Cover Level	Datum to GL [m]	0.73
Borehole Diameter [mm]	150	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	18.00	Standing Water [m BD]	18.44 [m BGL] 17.71
Response Zone Base [m BGL]	30.00	Standpipe Base Depth [m BD]	26.62 [m BGL] 25.89

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	47	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	24	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow waterra		Description	Cloudy, brown green		
Time Completed	14:00:00		ID	F-ØXYAZB-ULUP		
Depth of Sampling Point [m BD]	25.00	[m BGL] 24.27	Number/Round	5		
Water Level after Sampl. [m BD]	18.44	[m BGL] 17.71	Containers	0	x 1l Glass Bottle	
				0	x 1l Plastic Bottle	
Volume Sampled [litres]	3			0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC BH103		
Monitoring Point	01	Date	Thursday 2022-12-15
Tip Depth [m]	30.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.73

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 13:32	2022-12-15 13:35	2022-12-15 13:38	2022-12-15 13:41	2022-12-15 13:44	2022-12-15 13:47
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	25.00	25.00	25.00	25.00	25.00	25.00
Depth to Sampling Point [m BGL]	24.27	24.27	24.27	24.27	24.27	24.27
Depth to Water [m BD]	18.44	18.44	18.44	18.44	18.44	18.44
Depth to Water [m BGL]	17.71	17.71	17.71	17.71	17.71	17.71
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.14	9.14	9.14	9.14	9.14	9.14
Electrical Conductivity [µS/cm]	2678	2681	2688	2686	2689	2692
Dissolved Oxygen [%]	7.6	7.2	7.3	7.0	6.9	6.2
Dissolved Oxygen [mg/l]	0.86	0.81	0.83	0.79	0.78	0.59
Redox Potential Eh [mV]	-31.0	-35.6	-37.9	-40.1	-42.0	-43.6
Total Dissolved Solids [ppm]	2548.00	2548.00	2554.50	2554.50	2554.50	2561.00
Water Temperature [°C]	10.4	10.4	10.4	10.4	10.4	10.4
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	BH104
Operator	CM	
Skills Card		
Date	Thursday 2022-10-27	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:52:49
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	4.50	Standing Water [m BD]	7.12 [m BGL] 6.57
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	9.20 [m BGL] 8.65

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	19	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	58	1st	15:49:59	7.35	6.80	19
Depth of Purging Point [m BD]	8.50 [m BGL] 7.95	2nd	16:00:23	7.57	7.02	38
Equipment/Method	Waterra	3rd	16:07:01	7.54	6.99	58
Total Volume Purged (Actual) [litres]	58	4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Dark grey/black colour, very sandy no odour			
Time Completed	16:09:12	ID				
Depth of Sampling Point [m BD]	8.50 [m BGL] 7.95	Number/Round	0			
Water Level after Sampl. [m BD]	7.54 [m BGL] 6.99	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Well development only no sample taken. base after 3 well volumes 8.80m bdl



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP	BH104		
Monitoring Point	01	Date	Thursday 2022-10-27	
Tip Depth [m]	9.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.55	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-27 15:49	2022-10-27 16:00	2022-10-27 16:06			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	8.50	8.50	8.50			
Depth to Sampling Point [m BGL]	7.95	7.95	7.95			
Depth to Water [m BD]	7.35	7.57	7.54			
Depth to Water [m BGL]	6.80	7.02	6.99			
Cumulative Volume Purged Prior to Test [l]	19	38	56			
pH Value	9.36	9.65	10.18			
Electrical Conductivity [µS/cm]	748	724	739			
Dissolved Oxygen [%]	9.9	9.2	9.0			
Dissolved Oxygen [mg/l]	1.03	0.98	0.97			
Redox Potential Eh [mV]	6.1	4.1	-4.6			
Total Dissolved Solids [ppm]	637.00	637.00	637.00			
Water Temperature [°C]	13.7	12.2	12.1			
Ambient Temperature [°C]	15.0	15.0	15.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP	BH104	
Operator	NR CM		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:42:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	4.50	Standing Water [m BD]	7.02 [m BGL] 6.47
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	8.70 [m BGL] 8.15

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	16	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	slightly cloudy, no odour		
Time Completed	16:30:00		ID	F-YOKRXB-38IJ		
Depth of Sampling Point [m BD]	8.50	[m BGL] 7.95	Number/Round	1		
Water Level after Sampl. [m BD]	7.02	[m BGL] 6.47	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage	Coolbox		
			Preservation/Filtration	Temperature		

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	BH104
Monitoring Point	01	
Tip Depth [m]	0.00	
Monitoring Round No	1	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Tuesday 2022-11-15	
Operator	NR CM	
Skills Card		
Datum to GL [m]	0.55	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-15 15:55	2022-11-15 15:58	2022-11-15 16:01	2022-11-15 16:04	2022-11-15 16:07	2022-11-15 16:10
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	8.50	8.50	8.50	8.50	8.50	8.50
Depth to Sampling Point [m BGL]	7.95	7.95	7.95	7.95	7.95	7.95
Depth to Water [m BD]	7.02	7.02	7.02	7.02	7.02	7.02
Depth to Water [m BGL]	6.47	6.47	6.47	6.47	6.47	6.47
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.17	9.17	9.16	9.16	9.16	9.15
Electrical Conductivity [µS/cm]	792	787	782	781	780	769
Dissolved Oxygen [%]	17.7	10.0	8.8	9.2	9.0	8.7
Dissolved Oxygen [mg/l]	1.87	1.07	9.	0.96	0.95	0.90
Redox Potential Eh [mV]	-55.3	-52.9	-49.8	-46.6	-43.5	-42.1
Total Dissolved Solids [ppm]	676.00	676.00	669.50	669.50	669.50	669.50
Water Temperature [°C]	12.2	12.2	12.2	12.2	12.2	12.2
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH104
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-30	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:44:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	4.50	Standing Water [m BD]	6.78
		[m BGL]	6.23
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	8.64
		[m BGL]	8.09

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	17	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Low flow waterra		Description	Cloudy of silts and fine sands, dark grey. strong odour hard to describe.		
Time Completed	13:30:00		ID	F-SW7JYB-7CAG		
Depth of Sampling Point [m BD]	8.00	[m BGL]	7.45	Number/Round	3	
Water Level after Sampl. [m BD]	6.78	[m BGL]	6.23	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation		External Courier			
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	CP+RC BH104
Monitoring Point	01
Tip Depth [m]	9.00
Monitoring Round No	3
Datum	Cover Level

In Situ Water Fieldsheet

Date	Wednesday 2022-11-30
Operator	NR CM
Skills Card	
Datum to GL [m]	0.55

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-30 13:00	2022-11-30 13:03	2022-11-30 13:06	2022-11-30 13:09	2022-11-30 13:12	2022-11-30 13:15
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.45	7.45	7.45	7.45	7.45	7.45
Depth to Water [m BD]	6.78	6.78	6.78	6.78	6.78	6.78
Depth to Water [m BGL]	6.23	6.23	6.23	6.23	6.23	6.23
Cumulative Volume Purged Prior to Test [l]	2	3	4	5	6	7
pH Value	9.87	9.86	9.86	9.86	9.86	9.86
Electrical Conductivity [µS/cm]	500	499.6	498.2	498.3	498.4	498.5
Dissolved Oxygen [%]	37.5	36.5	34.9	31.0	30.2	32.8
Dissolved Oxygen [mg/l]	3.92	3.81	3.67	3.28	3.20	3.42
Redox Potential Eh [mV]	-98.6	-96.5	-94.9	-93.0	-91.2	-89.7
Total Dissolved Solids [ppm]	448.50	447.20	445.00	445.00	446.55	446.55
Water Temperature [°C]	10.7	10.7	10.7	10.7	10.7	10.7
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH104
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:06:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	4.50	Standing Water [m BD]	6.66 [m BGL] 6.11
Response Zone Base [m BGL]	9.00	Standpipe Base Depth [m BD]	8.54 [m BGL] 7.99

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	18	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Cloudy, dark brown, very silty/sandy.		
Time Completed	14:50:00		ID	F-CL1BZB-QGQR		
Depth of Sampling Point [m BD]	8.00	[m BGL] 7.45	Number/Round	5		
Water Level after Sampl. [m BD]	6.66	[m BGL] 6.11	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC BH104		
Monitoring Point	01	Date	Thursday 2022-12-15
Tip Depth [m]	9.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.55

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 14:26	2022-12-15 14:29	2022-12-15 14:32	2022-12-15 14:35	2022-12-15 14:38	2022-12-15 14:41
Flow-through Cell / Subsample	subSample	subSample	subSample	subSample	subSample	subSample
Depth to Sampling Point [m BD]	8.00	8.00	8.00	8.00	8.00	8.00
Depth to Sampling Point [m BGL]	7.45	7.45	7.45	7.45	7.45	7.45
Depth to Water [m BD]	6.66	6.66	6.66	6.66	6.66	6.66
Depth to Water [m BGL]	6.11	6.11	6.11	6.11	6.11	6.11
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	9.28	9.28	9.27	9.27	9.27	9.28
Electrical Conductivity [µS/cm]	1453	1477	1481	1484	1488	1490
Dissolved Oxygen [%]	48.9	44.6	46.7	46.1	47.9	45.6
Dissolved Oxygen [mg/l]	5.49	5.03	5.15	5.20	5.34	5.08
Redox Potential Eh [mV]	-71.7	-72.8	-73.5	-74.3	-75.1	-76.1
Total Dissolved Solids [ppm]	1339.00	1345.50	1345.50	1352.00	1352.00	1358.50
Water Temperature [°C]	10.2	10.2	10.2	10.2	10.2	10.2
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	BH106
Operator	NR CM	
Skills Card		
Date	Monday 2022-11-07	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:55:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	6.11
		[m BGL]	5.55
Response Zone Base [m BGL]	5.50	Standpipe Base Depth [m BD]	6.11
		[m BGL]	5.55

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	na	Description				na
Time Completed	15:02:00	ID				
Depth of Sampling Point [m BD]	6.11	[m BGL]	5.55	Number/Round	0	
Water Level after Sampl. [m BD]	6.11	[m BGL]	5.55	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	0				0	x Vial
Remarks	Borehole dry, no development possible					Transportation
						CoC Number
						Storage
						Preservation/Filtration

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	BH106
Date	Monday 2022-11-07

Additional Information

REMARKS

PHOTOS

ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP	BH106	
Operator	NR CM		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	12:03:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	1.00	Standing Water [m BD]	6.11 [m BGL] 5.55
Response Zone Base [m BGL]	5.50	Standpipe Base Depth [m BD]	6.11 [m BGL] 5.55

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	na				
Description	na				
Time Completed	12:12:00	ID	F-KCBRXB-9G07		
Depth of Sampling Point [m BD]	0.00 [m BGL] -0.56	Number/Round	1		
Water Level after Sampl. [m BD]	0.00 [m BGL] -0.56	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle	
			0	x Vial	
Remarks	Borehole dry, no sample.				
	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	BH106
Date	Tuesday 2022-11-15

Additional Information

REMARKS

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS101	
Operator	NR CM		
Skills Card			
Date	Monday 2022-11-07		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:40:00
Datum	Cover Level	Datum to GL [m]	0.70
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.80 [m BGL] 5.10
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.80 [m BGL] 5.10

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	na				
Time Completed	14:50:00				
Depth of Sampling Point [m BD]	0.00	[m BGL]	-0.70		
Water Level after Sampl. [m BD]	0.00	[m BGL]	-0.70		
Volume Sampled [litres]	0				
Remarks	Borehole dry so no development possible.				
	Transportation				
	CoC Number				
	Storage				
Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS101
Date	Monday 2022-11-07

Additional Information

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	DS101
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:53:00
Datum	Cover Level	Datum to GL [m]	0.70
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.81 [m BGL] 5.11
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.81 [m BGL] 5.11

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	na		Description	na		
Time Completed	12:00:00		ID	F-I0BRXB-1EFF		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.70	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.70	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS101
Date	Tuesday 2022-11-15

Additional Information

REMARKS

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS103
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-25	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:00:00
Datum	Cover Level	Datum to GL [m]	0.48
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.50 [m BGL] 5.02
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.50 [m BGL] 5.02

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	N/A		Description	N/A	
Time Completed	09:00:00		ID		
Depth of Sampling Point [m BD]	5.50	[m BGL] 5.02	Number/Round	0	
Water Level after Sampl. [m BD]	5.50	[m BGL] 5.02	Containers	0	x 1l Glass Bottle
Volume Sampled [litres]	0		0	x 1l Plastic Bottle	
			0	x Vial	
Remarks	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS
Location is dry, development not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS103		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.48	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS103
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:42:00
Datum	Cover Level	Datum to GL [m]	0.48
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.50 [m BGL] 5.02
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.50 [m BGL] 5.02

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	NA		Description	NA		
Time Completed	11:50:00		ID	F - IAARXB - MKOS		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.48	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.48	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS103
Date	Tuesday 2022-11-15

Additional Information

REMARKS

PHOTOS

ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS105	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:03:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.54 [m BGL] 4.99
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.54 [m BGL] 4.99

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	N/A				
Description	N/A				
Time Completed	09:03:00		ID		
Depth of Sampling Point [m BD]	5.54	[m BGL] 4.99	Number/Round 0		
Water Level after Sampl. [m BD]	5.54	[m BGL] 4.99	Containers 0 x 1l Glass Bottle		
Volume Sampled [litres]	0		0 x 1l Plastic Bottle		
			0 x Vial		
Remarks	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS
Location is dry, development not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS105		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.55	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	DS105
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:12:00
Datum	Cover Level	Datum to GL [m]	0.55
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.54 [m BGL] 4.99
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.54 [m BGL] 4.99

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	NA		Description	na		
Time Completed	11:20:00		ID	F - XK8RXB - Z1H8		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.55	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.55	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS105
Date	Tuesday 2022-11-15

Additional Information

REMARKS

PHOTOS

ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS106	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:06:00
Datum	Cover Level	Datum to GL [m]	0.50
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.51 [m BGL] 5.01
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.51 [m BGL] 5.01

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:06:00		ID			
Depth of Sampling Point [m BD]	5.51	[m BGL] 5.01	Number/Round	0		
Water Level after Sampl. [m BD]	5.51	[m BGL] 5.01	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS106
Monitoring Point	01	
Tip Depth [m]	5.00	
Monitoring Round No	0	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Tuesday 2022-10-25
Operator	CM
Skills Card	
Datum to GL [m]	0.50

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS106	
Operator	NR CM		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:21:00
Datum	Cover Level	Datum to GL [m]	0.50
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.52 [m BGL] 5.02
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.52 [m BGL] 5.02

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	na				
Time Completed	11:28:00	ID	F - FX8RXB - X3F4		
Depth of Sampling Point [m BD]	0.00 [m BGL] -0.50	Number/Round	1		
Water Level after Sampl. [m BD]	0.00 [m BGL] -0.50	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle	
			0	x Vial	
Remarks	Borehole dry, no sample				
	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS106
Date	Tuesday 2022-11-15

Additional Information

REMARKS

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS107
Operator	CM	
Skills Card		
Date	Tuesday 2022-10-25	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:09:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.59
		[m BGL]	5.06
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.59
		[m BGL]	5.06

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:09:00		ID			
Depth of Sampling Point [m BD]	5.59	[m BGL]	5.06	Number/Round	0	
Water Level after Sampl. [m BD]	5.59	[m BGL]	5.06	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	0				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS107		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.53	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS107
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:59:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.59 [m BGL] 5.06
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.59 [m BGL] 5.06

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	NA		Description	NA		
Time Completed	11:10:00		ID	F-W78RXB-RE2J		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.53	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.53	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS107
Date	Tuesday 2022-11-15

Additional Information

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS-107
Operator	CM	
Skills Card		
Date	Tuesday 2022-11-29	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:09:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.59 [m BGL] 5.06
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.59 [m BGL] 5.06

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:09:00		ID			
Depth of Sampling Point [m BD]	5.59	[m BGL] 5.06	Number/Round	0		
Water Level after Sampl. [m BD]	5.59	[m BGL] 5.06	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS-107
Monitoring Point	01	
Tip Depth [m]	5.00	
Monitoring Round No	0	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Tuesday 2022-11-29
Operator	CM
Skills Card	
Datum to GL [m]	0.53

CALIBRATION

Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS

Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS108	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:12:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.53
		[m BGL]	4.97
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.53
		[m BGL]	4.97

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:12:00		ID			
Depth of Sampling Point [m BD]	5.53	[m BGL]	4.97	Number/Round	0	
Water Level after Sampl. [m BD]	5.53	[m BGL]	4.97	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	0				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS108		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS108	
Operator	NR CM		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:30:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.53 [m BGL] 4.97
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.53 [m BGL] 4.97

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	NA				
Description	NA				
Time Completed	11:40:00	ID	F-0U9RXB-3QJM		
Depth of Sampling Point [m BD]	0.00 [m BGL] -0.56	Number/Round	1		
Water Level after Sampl. [m BD]	0.00 [m BGL] -0.56	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle	
			0	x Vial	
Remarks	Borehole dry, no sample.				
	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS108
Date	Tuesday 2022-11-15

Additional Information

REMARKS

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ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS-108	
Operator	CM		
Skills Card			
Date	Tuesday 2022-11-29		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:12:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.53 [m BGL] 4.97
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.53 [m BGL] 4.97

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	N/A				
Description	N/A				
Time Completed	09:12:00		ID		
Depth of Sampling Point [m BD]	5.53	[m BGL] 4.97	Number/Round 0		
Water Level after Sampl. [m BD]	5.53	[m BGL] 4.97	Containers 0 x 1l Glass Bottle		
Volume Sampled [litres]	0		0 x 1l Plastic Bottle		
			0 x Vial		
Remarks	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS-108		
Monitoring Point	01	Date	Tuesday 2022-11-29	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS109	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:15:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.47 [m BGL] 4.91
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.47 [m BGL] 4.91

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0	Volume		[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS					
Equipment/Method	N/A				
Description	N/A				
Time Completed	09:15:00		ID		
Depth of Sampling Point [m BD]	5.47	[m BGL]	4.91	Number/Round	0
Water Level after Sampl. [m BD]	5.47	[m BGL]	4.91	Containers	0 x 1l Glass Bottle
Volume Sampled [litres]	0			0	x 1l Plastic Bottle
				0	x Vial
Remarks	Transportation				
	CoC Number				
	Storage				
	Preservation/Filtration				

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS109		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	DS	DS109
Operator	NR CM	
Skills Card		
Date	Tuesday 2022-11-15	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:48:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.48 [m BGL] 4.92
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.48 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	NA		Description	NA		
Time Completed	10:55:00		ID	F-ES7RXB-SHLO		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.56	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.56	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS109
Date	Tuesday 2022-11-15

Additional Information

REMARKS

PHOTOS

ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS-109	
Operator	CM		
Skills Card			
Date	Tuesday 2022-11-29		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:15:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.47 [m BGL] 4.91
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.47 [m BGL] 4.91

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:15:00		ID			
Depth of Sampling Point [m BD]	5.47	[m BGL] 4.91	Number/Round	0		
Water Level after Sampl. [m BD]	5.47	[m BGL] 4.91	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS-109
Monitoring Point	01	
Tip Depth [m]	5.00	
Monitoring Round No	0	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Tuesday 2022-11-29
Operator	CM
Skills Card	
Datum to GL [m]	0.56

CALIBRATION

Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS

Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS110	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:18:00
Datum	Cover Level	Datum to GL [m]	0.60
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.52 [m BGL] 4.92
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.52 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:18:00		ID			
Depth of Sampling Point [m BD]	5.52	[m BGL] 4.92	Number/Round	0		
Water Level after Sampl. [m BD]	5.52	[m BGL] 4.92	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS110		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.60	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS-110	
Operator	CM		
Skills Card			
Date	Tuesday 2022-11-29		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:18:00
Datum	Cover Level	Datum to GL [m]	0.60
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.52 [m BGL] 4.92
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.52 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A		Description	N/A		
Time Completed	09:18:00		ID			
Depth of Sampling Point [m BD]	5.52	[m BGL] 4.92	Number/Round	0		
Water Level after Sampl. [m BD]	5.52	[m BGL] 4.92	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS
Location is dry, development is not possible



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS-110		
Monitoring Point	01	Date	Tuesday 2022-11-29	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.60	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	-	00:00:00	00:00:00	00:00:00
Dissolved O2	-	00:00:00	00:00:00	00:00:00
Conductivity	-	00:00:00	00:00:00	00:00:00
TDS Probe	-			
Interface Meter	-			

READINGS						
Date/Time						
Flow-through Cell / Subsample						
Depth to Sampling Point [m BD]						
Depth to Sampling Point [m BGL]						
Depth to Water [m BD]						
Depth to Water [m BGL]						
Cumulative Volume Purged Prior to Test [l]						
pH Value						
Electrical Conductivity [???						
Dissolved Oxygen [%]						
Dissolved Oxygen [mg/l]						
Redox Potential Eh [mV]						
Total Dissolved Solids [ppm]						
Water Temperature [°C]						
Ambient Temperature [°C]						
Water Level Measured Before/During/After Monitoring and Sampling						



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS110	
Operator	NR CM		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:35:00
Datum	Cover Level	Datum to GL [m]	0.60
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	5.54 [m BGL] 4.94
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.54 [m BGL] 4.94

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	0	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	NA		Description	NA		
Time Completed	10:45:00		ID	F-P97RXB-VPSN		
Depth of Sampling Point [m BD]	0.00	[m BGL] -0.60	Number/Round	1		
Water Level after Sampl. [m BD]	0.00	[m BGL] -0.60	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	0			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Borehole dry, no sample.		Transportation			
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power
Project Reference	F212561
Location ID	DS110
Date	Tuesday 2022-11-15

Additional Information

REMARKS

PHOTOS

ATTACHED FILES

SKETCH



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	WLS	DS111	
Operator	CM		
Skills Card			
Date	Tuesday 2022-10-25		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	16:09:29
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	77	LNAPL/DNAPL Interface Probe Available	no
Standpipe Diameter [mm]	50	LNAPL [mm]	DNAPL [mm]
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	3.76 [m BGL] 3.18
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	4.89 [m BGL] 4.31

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	3	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	9	1st	16:30:25	4.21	3.63	3
Depth of Purging Point [m BD]	4.50 [m BGL] 3.92	2nd	16:39:08	4.16	3.58	6
Equipment/Method	Waterra	3rd	16:48:12	4.19	3.61	9
Total Volume Purged (Actual) [litres]	9	4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	N/A	Description	Very dark black colour, sandy			
Time Completed	16:26:35	ID				
Depth of Sampling Point [m BD]	4.50 [m BGL] 3.92	Number/Round	0			
Water Level after Sampl. [m BD]	4.59 [m BGL] 4.01	Containers	0	x 1l Glass Bottle		
Volume Sampled [litres]	0		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	-				
	CoC Number	-				
	Storage	-				
	Preservation/Filtration	-				

GENERAL REMARKS
Well development only, no sample taken. Wl after 1L purged 4.59m Some recharge



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	WLS	DS111		
Monitoring Point	01	Date	Tuesday 2022-10-25	
Tip Depth [m]	5.00	Operator	CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.58	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	YSI-18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	YSI-18C100297	08:00:00	00:00:00	00:00:00
Conductivity	YSI-18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	YSI-18C100297			
Interface Meter	-			

READINGS						
	✓	✓	✓			
Date/Time	2022-10-25 16:28	2022-10-25 16:39	2022-10-25 16:48			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	4.50	4.50	4.50			
Depth to Sampling Point [m BGL]	3.92	3.92	3.92			
Depth to Water [m BD]	4.21	4.16	4.19			
Depth to Water [m BGL]	3.63	3.58	3.61			
Cumulative Volume Purged Prior to Test [l]	3	6	9			
pH Value	10.92	11.22	11.34			
Electrical Conductivity [µS/cm]	738	738	738			
Dissolved Oxygen [%]	22.2	21.4	20.7			
Dissolved Oxygen [mg/l]	2.30	2.24	2.16			
Redox Potential Eh [mV]	-4.2	-4.4	-4.7			
Total Dissolved Solids [ppm]	611.00	611.00	611.00			
Water Temperature [°C]	13.7	13.5	13.5			
Ambient Temperature [°C]	15.0	15.0	15.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS111	
Operator	NRCM'		
Skills Card			
Date	Tuesday 2022-11-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:40:00
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	3.34 [m BGL] 2.76
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	4.86 [m BGL] 4.28

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	5	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	clear, no odour		
Time Completed	10:30:00		ID	F-106RXB-TSSS		
Depth of Sampling Point [m BD]	4.50	[m BGL] 3.92	Number/Round	1		
Water Level after Sampl. [m BD]	3.34	[m BGL] 2.76	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS111
Monitoring Point	01	
Tip Depth [m]	0.00	
Monitoring Round No	1	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Tuesday 2022-11-15	
Operator	NR CM'	
Skills Card		
Datum to GL [m]	0.58	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297.			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-15 10:00	2022-11-15 10:03	2022-11-15 10:06	2022-11-15 10:09	2022-11-15 10:12	2022-11-15 10:15
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.50	4.50	4.50	4.50	4.50	45.00
Depth to Sampling Point [m BGL]	3.92	3.92	3.92	3.92	3.92	44.42
Depth to Water [m BD]	3.34	3.34	3.34	3.34	3.34	3.34
Depth to Water [m BGL]	2.76	2.76	2.76	2.76	2.76	2.76
Cumulative Volume Purged Prior to Test [l]	2	3	4	5	6	7
pH Value	9.80	9.94	10.10	10.14	10.20	10.24
Electrical Conductivity [µS/cm]	862	872	881	881	883	883
Dissolved Oxygen [%]	13.1	12.6	12.0	11.7	11.4	11.1
Dissolved Oxygen [mg/l]	1.42	1.32	1.28	1.23	1.19	1.15
Redox Potential Eh [mV]	40.3	27.5	20.2	15.8	11.9	8.9
Total Dissolved Solids [ppm]	741.00	754.00	767.00	767.00	767.00	767.00
Water Temperature [°C]	12.1	12.1	12.1	12.1	12.1	12.1
Ambient Temperature [°C]	11	11	11	11	11	11
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS111	
Operator	NR CM		
Skills Card			
Date	Wednesday 2022-11-30		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:45:00
Datum	Cover Level	Datum to GL [m]	0.58
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	3.04 [m BGL] 2.46
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	4.84 [m BGL] 4.26

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	6	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, grey		
Time Completed	12:30:00		ID	F-QC5JYB-4CT4		
Depth of Sampling Point [m BD]	4.00	[m BGL] 3.42	Number/Round	3		
Water Level after Sampl. [m BD]	3.04	[m BGL] 2.46	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	DS	DS111		
Monitoring Point	01	Date	Wednesday 2022-11-30	
Tip Depth [m]	5.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.58	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-30 12:01	2022-11-30 12:04	2022-11-30 12:07	2022-11-30 12:10	2022-11-30 12:13	2022-11-30 12:16
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.00	4.00	4.00	4.00	4.00	4.00
Depth to Sampling Point [m BGL]	3.42	3.42	3.42	3.42	3.42	3.42
Depth to Water [m BD]	3.04	3.04	3.04	3.04	3.04	3.04
Depth to Water [m BGL]	2.46	2.46	2.46	2.46	2.46	2.46
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	10.25	10.31	10.34	10.36	10.37	10.39
Electrical Conductivity [µS/cm]	902	899	896	894	892	890
Dissolved Oxygen [%]	18.1	16.9	17.4	15.9	15.6	15.0
Dissolved Oxygen [mg/l]	1.92	1.81	1.84	1.70	1.65	1.58
Redox Potential Eh [mV]	-143.3	-149.1	-155.3	-158.5	-160.9	-163.7
Total Dissolved Solids [ppm]	780.00	773.50	773.50	767.00	767.00	767.00
Water Temperature [°C]	12.2	12.2	12.2	12.2	12.2	12.2
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	during	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	DS	DS111	
Operator	NR CM		
Skills Card			
Date	Thursday 2022-12-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:30:00
Datum	Cover Level	Datum to GL [m]	0.56
Borehole Diameter [mm]	100	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	0.50	Standing Water [m BD]	2.87 [m BGL] 2.31
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	4.86 [m BGL] 4.30

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	7	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	9	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, light grey		
Time Completed	11:20:00		ID	F-Q3UAZB-XPEH		
Depth of Sampling Point [m BD]	4.00	[m BGL] 3.44	Number/Round	5		
Water Level after Sampl. [m BD]	2.87	[m BGL] 2.31	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	DS	DS111
Monitoring Point	01	
Tip Depth [m]	5.00	
Monitoring Round No	5	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Thursday 2022-12-15	
Operator	NR CM	
Skills Card		
Datum to GL [m]	0.56	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 10:45	2022-12-15 10:49	2022-12-15 10:52	2022-12-15 10:55	2022-12-15 10:58	2022-12-15 11:02
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.00	4.00	4.00	4.00	4.00	4.00
Depth to Sampling Point [m BGL]	3.44	3.44	3.44	3.44	3.44	3.44
Depth to Water [m BD]	2.87	2.87	2.87	2.87	2.87	2.87
Depth to Water [m BGL]	2.31	2.31	2.31	2.31	2.31	2.31
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	10.66	10.68	10.69	10.69	10.70	10.70
Electrical Conductivity [µS/cm]	927	928	925	923	921	917
Dissolved Oxygen [%]	19.6	18.2	17.4	16.4	15.3	14.4
Dissolved Oxygen [mg/l]	2.14	1.99	1.90	1.80	1.66	1.59
Redox Potential Eh [mV]	-10.6	-14.5	-18.0	-20.7	-23.4	-26.0
Total Dissolved Solids [ppm]	819.00	819.00	812.50	812.50	812.50	806.00
Water Temperature [°C]	11.3	11.3	11.3	11.3	11.3	11.3
Ambient Temperature [°C]	-2	-3	-2	-2	-3	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	AR-BH01
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-09	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:40:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.77
		[m BGL]	2.24
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.74
		[m BGL]	5.21

PURGING DETAILS								
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]		
Number of Well Volumes to Purge	3			[m BD]	[m BGL]			
Total Volume to be Purged [litres]	83	1st	12:40:00	4.58	4.05	44		
Depth of Purging Point [m BD]	5.00	[m BGL]	4.47	2nd	13:10:00	4.60	4.07	60
Equipment/Method	WATERRA PUMP		3rd	13:10:00	✓		60	
Total Volume Purged (Actual) [litres]	60	4th						
One Screen Volume [litres]	6	5th						

SAMPLING DETAILS			
Equipment/Method	NA	Description	Slightly silty, slightly sandy, light brown
Time Completed	13:10:00	ID	
Depth of Sampling Point [m BD]	5.00	[m BGL]	4.47
Water Level after Sampl. [m BD]	4.60	[m BGL]	4.07
Volume Sampled [litres]	0	Containers	0
			0
			0
Remarks	Slower recharge so had to turn pump down to match recharge. Ran dry with trickle of recharge so stopped. Rising head test completed after development	Transportation	x 1l Glass Bottle
		CoC Number	x 1l Plastic Bottle
		Storage	x Vial
		Preservation/Filtration	

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		
Project Reference	F212561		
Location ID	CP+RC	AR-BH01	
Monitoring Point	01	Date	Wednesday 2022-11-09
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	0	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.53

In Situ Water Fieldsheet

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS						
	✓	✓				
Date/Time	2022-11-09 12:40	2022-11-09 13:10				
Flow-through Cell / Subsample	subSample	subSample				
Depth to Sampling Point [m BD]	5.00	5.00				
Depth to Sampling Point [m BGL]	4.47	4.47				
Depth to Water [m BD]	4.58	4.60				
Depth to Water [m BGL]	4.05	4.07				
Cumulative Volume Purged Prior to Test [l]	44	60				
pH Value	6.96	6.82				
Electrical Conductivity [µS/cm]	1658	1655				
Dissolved Oxygen [%]	12.2	9.4				
Dissolved Oxygen [mg/l]	1.27	0.99				
Redox Potential Eh [mV]	-35.7	-63.7				
Total Dissolved Solids [ppm]	1391.00	1410.50				
Water Temperature [°C]	11.7	11.7				
Ambient Temperature [°C]	12	12				
Water Level Measured Before/During/After Monitoring and Sampling	before	before				



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	AR-BH01
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	11:26:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.83 [m BGL] 2.30
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.47 [m BGL] 4.94

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	25	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slightly brown, slight eggy odour.		
Time Completed	12:15:00		ID	F-DU6TXB-54AR		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.47	Number/Round	1		
Water Level after Sampl. [m BD]	2.83	[m BGL] 2.30	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC AR-BH01		
Monitoring Point	01	Date	Wednesday 2022-11-16
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	1	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.53

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 11:44	2022-11-16 11:47	2022-11-16 11:50	2022-11-16 11:53	2022-11-16 11:56	2022-11-16 11:59
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.47	4.47	4.47	4.47	4.47	4.47
Depth to Water [m BD]	2.83	2.83	2.83	2.83	2.83	2.83
Depth to Water [m BGL]	2.30	2.30	2.30	2.30	2.30	2.30
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.63	7.58	7.55	7.53	7.52	7.51
Electrical Conductivity [µS/cm]	1585	1585	1579	1580	1578	1577
Dissolved Oxygen [%]	8.2	7.8	7.5	7.3	7.2	7.2
Dissolved Oxygen [mg/l]	0.88	0.82	0.79	0.76	0.74	0.73
Redox Potential Eh [mV]	-55.2	-58.4	-60.2	-62.4	-64.6	-66.1
Total Dissolved Solids [ppm]	1332.50	1332.50	1326.00	1332.50	1326.00	1326.00
Water Temperature [°C]	13.2	13.2	13.2	13.2	13.2	13.2
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP+RC	AR-BH01	
Operator	NR CM		
Skills Card			
Date	Thursday 2022-12-01		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:08:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.56 [m BGL] 2.03
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.46 [m BGL] 4.93

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	27	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, yellowish brown, eggy smell		
Time Completed	14:50:00		ID	F-PR4LYB-K2I7		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.47	Number/Round	3		
Water Level after Sampl. [m BD]	2.56	[m BGL] 2.03	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC AR-BH01		
Monitoring Point	01	Date	Thursday 2022-12-01
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.53

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 14:22	2022-12-01 14:25	2022-12-01 14:28	2022-12-01 14:31	2022-12-01 14:34	2022-12-01 14:37
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.47	4.47	4.47	4.47	4.47	4.47
Depth to Water [m BD]	2.56	2.56	2.56	2.56	2.56	2.56
Depth to Water [m BGL]	2.03	2.03	2.03	2.03	2.03	2.03
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.70	7.70	7.70	7.70	7.70	7.70
Electrical Conductivity [μ S/cm]	1880	1890	1698	1702	1704	1706
Dissolved Oxygen [%]	21.4	20.1	19.2	18.7	18.3	17.5
Dissolved Oxygen [mg/l]	2.30	2.15	2.06	2.0	1.99	1.86
Redox Potential Eh [mV]	-46.7	-69.8	-75.6	-79.2	-82.6	-85.5
Total Dissolved Solids [ppm]	1625.00	1631.50	1638.00	1644.00	1644.00	1644.00
Water Temperature [°C]	11.8	11.8	11.8	11.8	11.8	11.8
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	AR-BH01
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:55:00
Datum	Cover Level	Datum to GL [m]	0.53
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.61 [m BGL] 2.08
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.45 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	26	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown yellow tinge, eggy odour.		
Time Completed	15:45:00		ID	F-MW89ZB-1T2F		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.47	Number/Round	5		
Water Level after Sampl. [m BD]	2.61	[m BGL] 2.08	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC AR-BH01		
Monitoring Point	01	Date	Wednesday 2022-12-14
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.53

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 15:17	2022-12-14 15:20	2022-12-14 15:23	2022-12-14 15:26	2022-12-14 15:29	2022-12-14 15:32
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.47	4.47	4.47	4.47	4.47	4.47
Depth to Water [m BD]	2.61	2.61	2.61	2.61	2.61	2.61
Depth to Water [m BGL]	2.08	2.08	2.08	2.08	2.08	2.08
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	6.98	6.98	6.97	6.97	6.96	6.96
Electrical Conductivity [µS/cm]	1670	1669	1672	1674	1675	1678
Dissolved Oxygen [%]	31.8	29.6	27.5	26.1	25.5	24.9
Dissolved Oxygen [mg/l]	3.67	3.46	3.03	2.99	2.34	2.87
Redox Potential Eh [mV]	-22.4	-24.5	-26.3	-28.7	-31.1	-33.9
Total Dissolved Solids [ppm]	1488.50	1488.50	1488.50	1488.50	1495.00	1495.00
Water Temperature [°C]	10.9	10.9	10.9	10.9	10.9	10.9
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	AR-BH02
Operator	NR CM	
Skills Card		
Date	Thursday 2022-11-10	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	09:30:00
Datum	Cover Level	Datum to GL [m]	0.62
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	2.16 [m BGL] 1.54
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.51 [m BGL] 9.89

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	113	1st	09:56:24	2.20	1.58	38
Depth of Purging Point [m BD]	10.00 [m BGL] 9.38	2nd	10:11:27	2.18	1.56	76
Equipment/Method	Waterra pump	3rd	10:25:09	2.18	1.56	113
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	na	Description Silty brown colour, no odour				
Time Completed	10:40:00	ID				
Depth of Sampling Point [m BD]	10.00 [m BGL] 9.38	Number/Round 0				
Water Level after Sampl. [m BD]	2.18 [m BGL] 1.56	Containers 0 x 1l Glass Bottle				
Volume Sampled [litres]	0	0 x 1l Plastic Bottle				
Remarks	0 x Vial					
	Transportation					
	CoC Number					
	Storage					
Preservation/Filtration						

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	AR-BH02
Monitoring Point	01	
Tip Depth [m]	10.00	
Monitoring Round No	0	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Thursday 2022-11-10	
Operator	NR CM	
Skills Card		
Datum to GL [m]	0.62	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C10097	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-10 09:56	2022-11-10 10:11	2022-11-10 09:50			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	10.00	10.00	10.00			
Depth to Sampling Point [m BGL]	9.38	9.38	9.38			
Depth to Water [m BD]	2.20	2.18	2.18			
Depth to Water [m BGL]	1.58	1.56	1.56			
Cumulative Volume Purged Prior to Test [l]	38	76	113			
pH Value	7.26	7.24	7.23			
Electrical Conductivity [µS/cm]	1660	1702	1625			
Dissolved Oxygen [%]	9.2	2.6	1.9			
Dissolved Oxygen [mg/l]	1.00	0.29	0.21			
Redox Potential Eh [mV]	-16.3	-62.9	-83.9			
Total Dissolved Solids [ppm]	1456.00	1495.00	1423.50			
Water Temperature [°C]	11.5	11.5	11.5			
Ambient Temperature [°C]	13.0	13.0	13.0			
Water Level Measured Before/During/After Monitoring and Sampling	during	during	during			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	AR-BH02
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-16	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	10:20:00
Datum	Cover Level	Datum to GL [m]	0.63
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	2.15 [m BGL] 1.52
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.44 [m BGL] 9.81

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	37	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slight brown, no odour		
Time Completed	11:15:00		ID	F-M78TXB-S0ZL		
Depth of Sampling Point [m BD]	10.00	[m BGL] 9.37	Number/Round	1		
Water Level after Sampl. [m BD]	2.15	[m BGL] 1.52	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	
Project Reference	F212561	
Location ID	CP	AR-BH02
Monitoring Point	01	
Tip Depth [m]	10.00	
Monitoring Round No	1	
Datum	Cover Level	

In Situ Water Fieldsheet

Date	Wednesday 2022-11-16
Operator	NR CM
Skills Card	
Datum to GL [m]	0.63

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-16 10:40	2022-11-16 10:43	2022-11-16 10:46	2022-11-16 10:49	2022-11-16 10:52	2022-11-16 10:57
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.37	9.37	9.37	9.37	9.37	9.37
Depth to Water [m BD]	2.15	2.15	2.15	2.15	2.15	2.15
Depth to Water [m BGL]	1.52	1.52	1.52	1.52	1.52	1.52
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.48	7.47	7.47	7.46	7.46	7.46
Electrical Conductivity [µS/cm]	1472	1485	1481	1480	1478	1477
Dissolved Oxygen [%]	12.6	10	9.8	9.6	9.4	9.2
Dissolved Oxygen [mg/l]	1.31	1.06	1.04	1.00	0.99	0.95
Redox Potential Eh [mV]	-32.4	-43.0	-45.7	-49.3	-53.7	-56.9
Total Dissolved Solids [ppm]	1300.00	1306.50	1306.50	1300.00	1300.00	1300.00
Water Temperature [°C]	11.3	11.3	11.3	11.3	11.3	11.3
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	AR-BH02
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	13:16:00
Datum	Cover Level	Datum to GL [m]	0.62
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.83
		[m BGL]	1.21
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.44
		[m BGL]	9.82

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge, eggy smell		
Time Completed	14:00:00		ID	F-XC3LYB-RH0G		
Depth of Sampling Point [m BD]	10.00	[m BGL]	9.38	Number/Round	3	
Water Level after Sampl. [m BD]	1.83	[m BGL]	1.21	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation		External Courier			
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	AR-BH02		
Monitoring Point	01	Date	Thursday 2022-12-01	
Tip Depth [m]	10.00	Operator	NR CM	
Monitoring Round No	3	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.62	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 14:11	2022-12-01 14:11	2022-12-01 14:11	2022-12-01 14:11	2022-12-01 14:11	2022-12-01 14:11
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.38	9.38	9.38	9.38	9.38	9.38
Depth to Water [m BD]	1.83	1.83	1.83	1.83	1.83	1.83
Depth to Water [m BGL]	1.21	1.21	1.21	1.21	1.21	1.21
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.84	7.82	7.81	7.81	7.80	7.80
Electrical Conductivity [µS/cm]	1678	1688	1705	1716	1722	1725
Dissolved Oxygen [%]	24.7	20.8	21.5	19.6	18.7	18.1
Dissolved Oxygen [mg/l]	2.61	2.20	2.31	2.10	2.01	1.94
Redox Potential Eh [mV]	-172.7	-173.4	-172.9	-171.7	-170.6	-169.0
Total Dissolved Solids [ppm]	1488.50	1501.50	1514.50	1527.50	1527.50	1534.00
Water Temperature [°C]	11	11	11	11	11	11
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	AR-BH02
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-12-14	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	14:00:00
Datum	Cover Level	Datum to GL [m]	0.62
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0
		DNAPL [mm]	0
Response Zone Top [m BGL]	7.00	Standing Water [m BD]	1.85
		[m BGL]	1.23
Response Zone Base [m BGL]	10.00	Standpipe Base Depth [m BD]	10.44
		[m BGL]	9.82

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	38	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, brown yellow, eggy odour.		
Time Completed	14:50:00		ID	F-C979ZB-8T35		
Depth of Sampling Point [m BD]	10.00	[m BGL]	9.38	Number/Round	5	
Water Level after Sampl. [m BD]	1.85	[m BGL]	1.23	Containers	0	x 1l Glass Bottle
					0	x 1l Plastic Bottle
Volume Sampled [litres]	3				0	x Vial
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power		In Situ Water Fieldsheet
Project Reference	F212561		
Location ID	CP+RC	AR-BH02	
Monitoring Point	01	Date	Wednesday 2022-12-14
Tip Depth [m]	10.00	Operator	NR CM
Monitoring Round No	5	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.62

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS						
	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-14 14:24	2022-12-14 14:27	2022-12-14 14:30	2022-12-14 14:33	2022-12-14 14:35	2022-12-14 14:38
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	10.00	10.00	10.00	10.00	10.00	10.00
Depth to Sampling Point [m BGL]	9.38	9.38	9.38	9.38	9.38	9.38
Depth to Water [m BD]	1.85	1.85	1.85	1.85	1.85	1.85
Depth to Water [m BGL]	1.23	1.23	1.23	1.23	1.23	1.23
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.20	7.20	7.20	7.20	7.20	7.20
Electrical Conductivity [µS/cm]	1465	1465	1471	1475	1481	1492
Dissolved Oxygen [%]	13.0	11.1	9.5	9.1	8.4	7.9
Dissolved Oxygen [mg/l]	1.44	1.22	1.06	1.02	0.91	0.88
Redox Potential Eh [mV]	-23.8	-33.8	-36.8	-39.8	-40.6	-41.3
Total Dissolved Solids [ppm]	1326.00	1326.00	1326.00	1332.50	1339.00	1345.50
Water Temperature [°C]	10.1	10.1	10.1	10.1	10.1	10.1
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP	HR-BH01
Operator	NR CM	
Skills Card		
Date	Wednesday 2022-11-09	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:40:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm] 0	DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.25 [m BGL] 1.60
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.61 [m BGL] 4.96

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well Volume	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	3			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	85	1st	15:59:00	2.75	2.10	30
Depth of Purging Point [m BD]	5.00 [m BGL] 4.35	2nd	16:15:00	3.00	2.35	60
Equipment/Method	Waterra pump	3rd	16:30:00	3.12	2.47	90
Total Volume Purged (Actual) [litres]	90	4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS							
Equipment/Method	na	Description					na
Time Completed	16:00:00	ID					
Depth of Sampling Point [m BD]	5.00 [m BGL] 4.35	Number/Round					0
Water Level after Sampl. [m BD]	3.12 [m BGL] 2.47	Containers		0	x 1l Glass Bottle		
Volume Sampled [litres]	0			0	x 1l Plastic Bottle		
Remarks			0				x Vial
	Transportation						
	CoC Number						
	Storage						
Preservation/Filtration							

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP	HR-BH01		
Monitoring Point	01	Date	Wednesday 2022-11-09	
Tip Depth [m]	7.00	Operator	NR CM	
Monitoring Round No	0	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.65	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS						
	✓	✓	✓			
Date/Time	2022-11-09 15:59	2022-11-09 16:15	2022-11-09 16:30			
Flow-through Cell / Subsample	subSample	subSample	subSample			
Depth to Sampling Point [m BD]	5.00	5.00	5.00			
Depth to Sampling Point [m BGL]	4.35	4.35	4.35			
Depth to Water [m BD]	2.75	3.00	3.12			
Depth to Water [m BGL]	2.10	2.35	2.47			
Cumulative Volume Purged Prior to Test [l]	30	60	90			
pH Value	7.06	6.98	6.92			
Electrical Conductivity [µS/cm]	1191	1161	1139			
Dissolved Oxygen [%]	6.7	6.5	6.2			
Dissolved Oxygen [mg/l]	0.71	0.69	0.66			
Redox Potential Eh [mV]	-81.7	-76.4	-78.2			
Total Dissolved Solids [ppm]	1027.00	994.00	975.00			
Water Temperature [°C]	12.2	12.4	12.4			
Ambient Temperature [°C]	12	12	12			
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before			



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	HR-BH01
Operator	NR CM	
Skills Card		
Date	Friday 2022-11-18	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	08:56:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.02 [m BGL] 1.37
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.57 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Slightly cloudy, slight yellow brown, strong eggy smell.		
Time Completed	09:45:00		ID	F-UHMWXB-INLF		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.35	Number/Round	1		
Water Level after Sampl. [m BD]	2.02	[m BGL] 1.37	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
				0	x Vial	
Remarks	Transportation	External Courier				
	CoC Number					
	Storage	Coolbox				
	Preservation/Filtration	Temperature				

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC HR-BH01		
Monitoring Point	01	Date	Friday 2022-11-18
Tip Depth [m]	0.00	Operator	NR CM
Monitoring Round No	1	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.65

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	08:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	08:00:00	00:00:00	00:00:00
Conductivity	18C100297	08:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	na			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-11-18 09:18	2022-11-18 09:21	2022-11-18 09:24	2022-11-18 09:27	2022-11-18 09:30	2022-11-18 09:33
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.35	4.35	4.35	4.35	4.35	4.35
Depth to Water [m BD]	2.02	2.02	2.02	2.02	2.02	2.02
Depth to Water [m BGL]	1.37	1.37	1.37	1.37	1.37	1.37
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.04	7.03	7.02	7.02	7.01	7.01
Electrical Conductivity [µS/cm]	1222	1222	1222	1224	1224	1224
Dissolved Oxygen [%]	21.6	20.8	20.5	20.1	19.6	19.0
Dissolved Oxygen [mg/l]	2.24	2.15	2.1w	2.08	2.04	1.97
Redox Potential Eh [mV]	-43.7	-48.1	-51.0	-53.8	-56.1	-58.3
Total Dissolved Solids [ppm]	1040.00	1040.00	1040.00	1040.00	1040.00	1040.00
Water Temperature [°C]	12.6	12.6	12.6	12.6	12.6	12.6
Ambient Temperature [°C]	10	10	10	10	10	10
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station	
Project Reference	F212561	
Location ID	CP+RC	HR-BH01
Operator	NR CM	
Skills Card		
Date	Thursday 2022-12-01	

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:10:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.14 [m BGL] 1.49
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.56 [m BGL] 4.91

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge, eggy odour		
Time Completed	16:00:00		ID	F-JA6LYB-UZTA		
Depth of Sampling Point [m BD]	4.00	[m BGL] 3.35	Number/Round	3		
Water Level after Sampl. [m BD]	2.14	[m BGL] 1.49	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3			0	x 1l Plastic Bottle	
Remarks			Transportation	External Courier		
			CoC Number			
			Storage			
			Preservation/Filtration			

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power	In Situ Water Fieldsheet	
Project Reference	F212561		
Location ID	CP+RC HR-BH01		
Monitoring Point	01	Date	Thursday 2022-12-01
Tip Depth [m]	5.00	Operator	NR CM
Monitoring Round No	3	Skills Card	
Datum	Cover Level	Datum to GL [m]	0.65

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-01 15:29	2022-12-01 15:32	2022-12-01 15:35	2022-12-01 15:38	2022-12-01 15:41	2022-12-01 15:44
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	4.00	4.00	4.00	4.00	4.00	4.00
Depth to Sampling Point [m BGL]	3.35	3.35	3.35	3.35	3.35	3.35
Depth to Water [m BD]	2.14	2.14	2.14	2.14	2.14	2.14
Depth to Water [m BGL]	1.49	1.49	1.49	1.49	1.49	1.49
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.27	7.26	7.25	7.25	7.25	7.25
Electrical Conductivity [µS/cm]	1474	1478	1476	1472	1470	1469
Dissolved Oxygen [%]	28.7	25.6	22.3	24.6	22.0	21.1
Dissolved Oxygen [mg/l]	3.04	2.71	2.39	2.61	2.34	2.27
Redox Potential Eh [mV]	-110.1	-111.7	-113.0	-114.2	-115.0	-115.7
Total Dissolved Solids [ppm]	1274.00	1274.00	1274.00	1274.00	1274.00	1267.50
Water Temperature [°C]	11.8	11.8	11.8	11.8	11.8	11.8
Ambient Temperature [°C]	6	6	6	6	6	6
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before



Project Name	Keadby 3 Low Carbon Gas Power Station		
Project Reference	F212561		
Location ID	CP+RC	HR-BH01	
Operator	NR CM		
Skills Card			
Date	Thursday 2022-12-15		

Water Sampling Data Sheet

MONITORING POINT			
Reference	01	Time Measured	15:08:00
Datum	Cover Level	Datum to GL [m]	0.65
Borehole Diameter [mm]	200	LNAPL/DNAPL Interface Probe Available	yes
Standpipe Diameter [mm]	50	LNAPL [mm]	0 DNAPL [mm] 0
Response Zone Top [m BGL]	2.00	Standing Water [m BD]	2.25 [m BGL] 1.60
Response Zone Base [m BGL]	5.00	Standpipe Base Depth [m BD]	5.57 [m BGL] 4.92

PURGING DETAILS						
Volume to be Purged (1 Well Volume) [litres]	28	Well	Time Completed	Water Level		Cumulative Volume Purged [litres]
Number of Well Volumes to Purge	0			[m BD]	[m BGL]	
Total Volume to be Purged [litres]	0	1st				
Depth of Purging Point [m BD]	[m BGL]	2nd				
Equipment/Method		3rd				
Total Volume Purged (Actual) [litres]		4th				
One Screen Volume [litres]	6	5th				

SAMPLING DETAILS						
Equipment/Method	Peristaltic Pump		Description	Clear, yellow tinge		
Time Completed	14:50:00		ID	F-0P4BZB-NCGD		
Depth of Sampling Point [m BD]	5.00	[m BGL] 4.35	Number/Round	5		
Water Level after Sampl. [m BD]	2.25	[m BGL] 1.60	Containers	0	x 1l Glass Bottle	
Volume Sampled [litres]	3		0	x 1l Plastic Bottle		
			0	x Vial		
Remarks	Transportation					
	CoC Number					
	Storage					
	Preservation/Filtration					

GENERAL REMARKS



Project Name	Keadby 3 Low Carbon Gas Power			In Situ Water Fieldsheet
Project Reference	F212561			
Location ID	CP+RC	HR-BH01		
Monitoring Point	01	Date	Thursday 2022-12-15	
Tip Depth [m]	5.00	Operator	NR CM	
Monitoring Round No	5	Skills Card		
Datum	Cover Level	Datum to GL [m]	0.65	

CALIBRATION				
Instrument Type	Model Number	Time of Calibration		
		Before	During	After
pH/Redox/Temp	18C100297	09:00:00	00:00:00	00:00:00
Dissolved O2	18C100297	09:00:00	00:00:00	00:00:00
Conductivity	18C100297	09:00:00	00:00:00	00:00:00
TDS Probe	18C100297			
Interface Meter	NA			

READINGS	✓	✓	✓	✓	✓	✓
Date/Time	2022-12-15 15:24	2022-12-15 15:27	2022-12-15 15:30	2022-12-15 15:33	2022-12-15 15:36	2022-12-15 15:39
Flow-through Cell / Subsample	cell	cell	cell	cell	cell	cell
Depth to Sampling Point [m BD]	5.00	5.00	5.00	5.00	5.00	5.00
Depth to Sampling Point [m BGL]	4.35	4.35	4.35	4.35	4.35	4.35
Depth to Water [m BD]	2.25	2.25	2.25	2.25	2.25	2.25
Depth to Water [m BGL]	1.60	1.60	1.60	1.60	1.60	1.60
Cumulative Volume Purged Prior to Test [l]	3	4	5	6	7	8
pH Value	7.48	7.48	7.48	7.48	7.48	7.48
Electrical Conductivity [µS/cm]	3214	2872	3013	3028	3029	3026
Dissolved Oxygen [%]	46.8	46.4	47.4	47.2	47.0	46.9
Dissolved Oxygen [mg/l]	5.10	5.07	5.18	5.14	5.13	5.10
Redox Potential Eh [mV]	-135.4	-135.2	-134.6	-134.1	-134.0	-133.8
Total Dissolved Solids [ppm]	2639.50	2574.00	2717.00	2723.50	2710.5-	2710.50
Water Temperature [°C]	10.5	10.5	10.5	10.5	10.5	10.5
Ambient Temperature [°C]	-2	-2	-2	-2	-2	-2
Water Level Measured Before/During/After Monitoring and Sampling	before	before	before	before	before	before

Appendix K

Geotechnical Laboratory Test Results

Appendix K Contents

- K.1 Guidance Notes
 - K.1.1 General Notes on Laboratory Test Results
- K.2 Accreditation and Calibration Reports
- K.3 Geotechnical Laboratory Schedules
 - K.3.1 Schedule of Geotechnical Laboratory Test Notices/Clarifications
- K.4 Geotechnical Laboratory Test Results
 - K.4.1 Fugro Laboratory Results
 - K.4.2 Subcontractor Laboratory Results

K.1 Guidance Notes

Title	Reference
General Notes on Laboratory Test ResultsU100 Driven Open Tube Samples	K.1.1
cc. Test Methods	K.1.1.1
dd. Abbreviations on Results Sheets	K.1.1.2
ee. Sample Descriptions	K.1.1.3
ff. Interpretation of Test Results	K.1.1.4
gg. U100 Driven Open Tube Samples	K.1.1.5

K.1.1 General Notes on Laboratory Test Results

K.1.1.1 Test Methods

The tests reported on the following sheets have been carried out in accordance with the methods given in BS 1377:1990 or BS EN ISO17892:2014-2018 subject to minor variances as described below. These guidance notes also describe notation used in reporting the FGSL laboratory tests.

K.1.1.2 Abbreviations on Results Sheets

Table K.1: Sample Types

Sample Types	Description
D	Small disturbed sample
B	Bulk disturbed sample
LB	Large bulk disturbed sample
U/UT	General purpose open drive tube sample
P	Piston sample
C	Rotary core sample

K.1.1.3 Sample Descriptions

The sample descriptions shown on the test report sheets are the technician's visual descriptions of the test samples, in accordance with Clause 9.1 of Part 1 of BS 1377:1990 and do not necessarily comply with the requirements of BS 5930:2015 or BS EN ISO 14688-1:2018. For a more comprehensive description of the soil samples to these standards, reference should be made to the exploratory location records.

K.1.1.4 Interpretation of Test Results

Laboratory test results in this report give the soil properties of individual specimens tested under specified conditions. Individual results or groups of results may not be appropriate for use as design parameters for some geotechnical analyses. The samples may be non-representative, disturbed internally, or prepared and tested under conditions suited for different geotechnical applications. Unless the selection of design parameters is discussed in this report, it is recommended that the advice of an appropriately qualified and experienced specialist is sought.

K.1.1.5 U100 Driven Open Tube Samples

It should be noted that the sampling method using standard U100 (thick walled) samplers may give Class 2 samples, i.e. for use for laboratory classification, moisture content and density testing, but more generally Class 3. The sampling procedure using thin wall samples can achieve Class 1 samples (suitable for strength, deformation and consolidation testing as well as Class 2 type testing) in non-sensitive fine cohesive soils of stiff or lower consistency. In brittle or closely fissured materials such as hard clays, the lower sampling class is more

frequently achieved, i.e. for use for laboratory classification and moisture content testing. UT samples are thin wall (OS-T/W) samples and so may provide Class 1 samples.

Building Research Establishment (BRE) Special Digest 1 testing may be carried out on disturbed samples. Fugro may have been instructed to treat the samples in a similar manner to environmental samples. If that is the case, see sample handling in Appendix L.

K.2 Accreditation and Calibration Reports


Title	Reference
Fugro GeoServices Limited, Consett, UKAS Schedule of Accreditation	UKAS 1483
Professional Soils Laboratory Ltd, UKAS Schedule of Accreditation	UKAS 4043
Terra Tek Limited, UKAS Schedule of Accreditation	UKAS 0126
MATtest Limited, UKAS Schedule of Accreditation	UKAS 2643

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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 <p>1483</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>Fugro GeoServices Limited</h3> <p>Issue No: 031 Issue date: 18 February 2022</p>	
	<p>Armstrong House Unit 43 Number One Industrial Estate Medomsley Road Consett Co Durham DH8 6TW</p>	<p>Contact: Mr J D Ashworth [REDACTED] [REDACTED] E-Mail: [REDACTED]@fugro.com Website: www.fugro.com</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ROCK	<p>End preparation of rock specimens for compressive strength</p> <p>Point load strength and anisotropy indices</p> <p>Water content</p> <p>Porosity and density - by saturation and calliper techniques</p> <p>Porosity and density - by saturation and buoyancy techniques</p> <p>Slake-durability index</p> <p>Uniaxial compressive strength</p> <p>Deformability of rock materials in uniaxial compression (Young's modulus & Poisson's ratio)</p> <p>Shore hardness</p> <p>Dynamic Indirect Tensile Strength - By Brazilian Test</p> <p>Sound velocity</p>	<p>ASTM D 4543-19</p> <p>The Complete ISRM Suggested Methods for Rock Characterisation, Testing and Monitoring:1974-2006. Editors: R Ulusay & J A Hudson</p> <p>ISRM Suggested Methods for Rock Characterization Testing and Monitoring 2007-2014. Editors R. Ulusay</p>



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Fugro GeoServices Limited
Issue No: 031 **Issue date:** 18 February 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS for civil engineering purposes	California Bearing Ratio (CBR)	BS 1377- 4:1990
	Shear strength by direct shear (small shear box apparatus) (large shear box apparatus)	BS 1377- 7:1990
	Unconfined compressive strength - load frame method	BS 1377- 7:1990
	Undrained shear strength - triaxial compression without measurement of pore pressure	BS 1377- 7:1990
	Undrained shear strength - triaxial compression with multistage loading and without measurement of pore pressure	BS 1377- 7:1990
	Moisture content - oven drying method	BS 1377- 2:1990
	Saturation moisture content of chalk	BS 1377- 2:1990
	Liquid limit - cone penetrometer - one point	BS 1377- 2:1990
	Plastic limit	BS 1377- 2:1990
	Plasticity index	BS 1377- 2:1990
	Density - linear measurement - linear measurement - immersion in water - water displacement	BS 1377- 2:1990
	Particle density - gas jar - small pycnometer	BS 1377- 2:1990
	Particle size distribution - wet sieving - dry sieving	BS 1377- 2:1990
Particle size distribution - sedimentation - pipette method	BS 1377- 2:1990	



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Issue No: 031 Issue date: 18 February 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS for civil engineering purposes (cont'd)	Dry density/moisture content relationship (2.5 kg rammer) (4.5 kg rammer) (vibrating hammer)	BS 1377- 4:1990
	Moisture condition value (MCV)	BS 1377- 4:1990
	Determination of MCV / moisture content relation to a soil	BS 1377-4:1990
	Chalk crushing value	BS 1377- 4:1990
	One-dimensional consolidation properties	BS 1377- 5:1990
	Constant head permeability in a triaxial cell	BS 1377- 6:1990
	Shear strength by laboratory vane	BS 1377-7:1990
	Consolidated undrained triaxial compression test with the measurement of pore water pressure	BS 1377- 8:1990
	Consolidated undrained triaxial compression test with the measurement of pore water pressure using multistage loading	Documented In-House Method LTPMS 41: Feb 2016
	Consolidated drained triaxial compression test with measurement of volume change	BS 1377- 8:1990
Consolidated drained triaxial compression test with measurement of volume change using multistage loading	Documented In-House Method LTPMS 42: Feb 2016	
Hand held shear vane	NZ Geotechnical Society Inc: Aug 2001	



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Fugro GeoServices Limited
Issue No: 031 **Issue date:** 18 February 2022

Testing performed at main address only


Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil	Water content	BS EN ISO 17892-1:2014
	Bulk density - linear measurement method - immersion in fluid method - fluid displacement method	BS EN ISO 17892-2:2014
	Determination of particle density - fluid pycnometer method	BS EN ISO 17892-3:2015
	Determination of particle size distribution - sieving method - pipette method	BS EN ISO 17892-4:2016
	Incremental loading oedometer test	BS EN ISO 17892-5:2017
	Unconfined compression test	BS EN ISO 17892-7:2018
	Unconsolidated undrained triaxial test	BS EN ISO 17892-8:2018
	Consolidated triaxial compression test	BS EN ISO 17892-9:2018
	Determination of shear - small shearbox - large shearbox	BS EN ISO 17892-10:2018
	Permeability in a triaxial cell	BS EN ISO 17892-11:2019
	Determination of plastic limit	BS EN ISO 17892-12:2018
	Determination of plasticity index	BS EN ISO 17892-12:2018
	Determination of liquid limit - fall cone method	BS EN ISO 17892-12:2018
END		

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 4043 Accredited to ISO/IEC 17025:2017	Professional Soils Laboratory Ltd	
	Issue No: 020 Issue date: 17 June 2021	
	5/7 Hexthorpe Road Hexthorpe Doncaster DN4 0AR	Contact: Mr A Watkins ██████████ ██████████ E-Mail: ██████████@prosoils.co.uk Website: www.prosoils.co.uk
Testing performed by the Organisation at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address 5/7 Hexthorpe Road Hexthorpe Doncaster DN4 0AR	Local contact Mr A Watkins ██████████	Aggregates Rock & and Soils Laboratory

Site activities performed away from the locations listed above:

Location details	Activity	Location code
All locations suitable for the activities listed	Soils	Site



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Professional Soils Laboratory Ltd

Issue No: 020 Issue date: 17 June 2021

Testing performed by the Organisation at the locations specified

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Particle size distribution - sieving method	BS EN 933-1:2012	Laboratory
	Determination of resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2020	Laboratory
ROCK	Point load strength	ISRM Commission on Testing Methods, Suggested Method for Determining Point Load Strength 1985	Laboratory
SOILS for civil engineering purposes	Moisture content - oven drying method	BS 1377-2:1990	Laboratory
	Saturation moisture content of chalk	BS 1377-2:1990	Laboratory
	Liquid limit - cone penetrometer	BS 1377-2:1990	Laboratory
	Liquid limit - cone penetrometer - one point	BS 1377-2:1990	Laboratory
	Linear shrinkage	BS 1377-2:1990	Laboratory
	Plastic limit	BS 1377-2:1990	Laboratory
	Plasticity index and liquidity index	BS 1377-2:1990	Laboratory
	Particle density - gas jar	BS 1377-2:1990	Laboratory
	Particle size distribution - wet sieving	BS 1377-2:1990	Laboratory
	Particle size distribution - dry sieving	BS 1377-2:1990	Laboratory
Uniformity coefficient	Specification for Highways Works – Table 6/1 footnote 5	Laboratory	



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Issue No: 020 Issue date: 17 June 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	Particle size distribution - sedimentation - pipette method	BS 1377-2:1990	Laboratory
	Density –linear measurement	BS 1377-2:1990	Laboratory
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377-4:1990	Laboratory
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377-4:1990	Laboratory
	Dry density/moisture content relationship (vibrating hammer)	BS 1377:Part 4:1990	Laboratory
	California Bearing Ratio (CBR)	BS 1377-4:1990	Laboratory
	Moisture condition value MCV - natural moisture content	BS 1377-4:1990	Laboratory Site
	Moisture condition value MCV/moisture content relation	BS 1377-4:1990	Laboratory
	One-dimensional consolidation properties	BS 1377-5:1990	Laboratory
	One dimensional swell / strain	Documented In-House method No. IHLTP01:May 2011	Laboratory
	Permeability in a triaxial cell	BS 1377-6:1990	Laboratory
	Undrained shear strength - triaxial compression without measurement of pore pressure	BS 1377-7:1990	Laboratory
	Undrained shear strength - triaxial compression with multistage loading and without measurement of pore pressure	BS 1377-7:1990	Laboratory
Shear strength – small shearbox	BS 1377-7:1990	Laboratory	



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Issue No: 020 Issue date: 17 June 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	Shear strength – large shearbox	BS 1377-7:1990	Laboratory
	Effective angle of internal friction and effective cohesion of earthworks materials	BS 1377:Part 7:1990 and Specification for Highway Works: February 2016: clause 636	Laboratory
	Residual shear strength - ring shear apparatus	BS 1377-7:1990	Laboratory
	Effective shear strength - consolidated-undrained triaxial compression test with measurement of pore pressure	BS 1377-8:1990	Laboratory
	Effective shear strength - consolidated-undrained triaxial compression test with measurement of pore pressure - multistage tests	DIHM LTP13	Laboratory
	Effective shear strength - consolidated-drained triaxial compression test with measurement of volume change	BS 1377-8:1990	Laboratory
	Effective shear strength - consolidated-drained triaxial compression test with measurement of volume change - multistage tests	DIHM LTP12	Laboratory
	Soil suction (filter-paper method)	Documented In-House Method based on BRE IP4/93 No. IHLTP02:May 2011	Laboratory
	In-situ density - sand replacement method (small pouring cylinder)	BS 1377-9:1990	Site
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377-9:1990	Site
In-situ density - core cutter method	BS 1377-9:1990	Site	



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Issue No: 020 Issue date: 17 June 2021

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	Vertical deformation and strength characteristics by the incremental plate loading test	BS 1377-9:1990	Site
	In-situ California Bearing Ratio (CBR)	BS 1377-9:1990	Site
	Determination of equivalent CBR value using the plate bearing test (loads from 1 to 500 kN)	Design Manual for Roads and Bridges. Volume 7: Pavement Design and Maintenance. HD 25/94:Foundations	Site
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil	Water content	BS EN ISO 17892-1:2014	Laboratory
	Bulk density - linear measurement method	BS EN ISO 17892-2:2014	Laboratory
	Determination of particle size distribution - sieving method	BS EN ISO 17892-4:2016	Laboratory
	Determination of particle size distribution - pipette method	BS EN ISO 17892-4:2016	Laboratory
	Incremental loading oedometer test	BS EN ISO 17892-5:2017	Laboratory
	Unconsolidated undrained triaxial test	BS EN ISO 17892-8:2018	Laboratory
	Consolidated triaxial compression tests on water saturated soils	BS EN ISO 17892-9:2018	Laboratory
	Direct Shear Tests - Small Shearbox	BS EN ISO 17892-10:2018	Laboratory
	Direct Shear Tests - Large Shearbox	BS EN ISO 17892-10:2018	Laboratory
	Direct Shear Tests - Ring Shear Test	BS EN ISO 17892-10:2018	Laboratory
Permeability in a triaxial cell	BS EN ISO 17892-11 2019	Laboratory	



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Issue No: 020 Issue date: 17 June 2021

Testing performed by the Organisation at the locations specified


Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil (cont'd)	Determination of liquid limit by the fall cone method	BS EN ISO 17892-12 2018	Laboratory
	Determination of plastic limit	BS EN ISO 17892-12 2018	Laboratory
	Plasticity Index and Liquidity Index	BS EN ISO 17892-12 2018	Laboratory
END			

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 <p>UKAS TESTING</p> <p>0126</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>TERRA TEK Limited</h3> <p>Issue No: 075 Issue date: 11 October 2022</p>	
	<p>Whistleberry Road Hamilton Glasgow Scotland ML3 0HP</p>	<p>Contact: Mr D McGiff [Redacted] [Redacted] E-Mail: [Redacted]@terratek.co.uk Website: www.terratek.co.uk</p>
<p>Testing performed by the Organisation at the locations specified below</p>		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
<p>Address 62 Rochsolloch Road Airdrie Lanarkshire Scotland ML6 9BG</p>	<p>Local contact Mr D McGiff Tel: +44 (0)1236 747949 Fax: +44 (0)1236 747849 Email: airdrie@terratek.co.uk</p>	<p>Testing Aggregates – mechanical & physical tests Rock - mechanical & physical tests Soils - mechanical & physical tests</p>	Airdrie
<p>Address Moor Lane Witton Birmingham B6 7HG</p>	<p>Local contact Mr S Langman Tel: +44 (0)121 344 4838 Fax: +44 (0)121 356 3599 Email: birmingham@terratek.co.uk</p>	<p>Testing Aggregates - mechanical & physical tests Concrete – chemical tests Soils – mechanical, physical tests & chemical tests & MCERTS Waters – chemical tests Health and Hygiene Asbestos – Support Functions :</p> <ul style="list-style-type: none"> • Quality Audit Administration • Contract Review • Scheduling • Personnel • Equipment • Measurement Traceability • Reporting 	Birmingham
<p>Address The New Forge College Road North Aston Clinton Aylesbury Bucks HP22 5EZ</p>	<p>Local contact Ms J Hopkins Tel: +44 (0)1494 810136 Email: astonclinton@terratek.co.uk</p>	<p>Testing: Aggregates – physical tests Soils – mechanical & physical tests</p>	Aston Clinton



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TERRA TEK Limited
Issue No: 075 Issue date: 11 October 2022

Testing performed by the Organisation at the locations specified

Site activities performed away from the locations listed above:

Location details	Activity	Location code
All locations suitable for the activities listed		
Address & contact as above	Testing: Soils – mechanical & physical tests	Site: Airdrie Birmingham Aston Clinton



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TERRA TEK Limited
Issue No: 075 Issue date: 11 October 2022

Testing performed by the Organisation at the locations specified

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	<u>Mechanical & Physical Tests</u>		
	Determination of water content by drying in a ventilated oven	BS EN 1097-5:2008	Airdrie
	Particle size distribution - washing and sieving	BS 812:Part 103:Section 103.1:1985	Airdrie
	Ten per cent fines value - dry - particle size 10mm and greater	BS 812:Part 111:1990	Airdrie
	Ten per cent fines value – soaked - particle size 10mm and greater (loads from 20 to 2000kN)	BS 812:Part 111:1990	Airdrie
	Aggregate crushing value - particle size 10 mm and greater	BS 812-110:1990	Airdrie
	Particle size distribution - sieving method	BS EN 933-1:2012	Airdrie Birmingham Aston Clinton
	Particle shape - flakiness index	BS EN 933-3:2012	Airdrie
	Resistance to fragmentation by the Los Angeles Method	EN 1097-2:2010	Airdrie
	Uniformity coefficient	Specification for Highway Works table 6/1 footnote 5	Airdrie Birmingham Aston Clinton
Magnesium Sulphate Test	BS EN 1367-2:2009	Airdrie	
Particle density and water absorption - pycnometer method for aggregate particles between 4 mm and 31,5 mm	BS EN 1097-6:2013	Airdrie	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
UNBOUND AND HYDRAULICALLY BOUND MATERIALS	<u>Mechanical & Physical Tests</u>		
	Laboratory reference density and water content – Proctor compaction	BS EN 13286-2:2010	Airdrie
	Laboratory reference density and water content – Vibrating hammer –	BS EN 13286-4:2021	Airdrie
	Test method for the determination of the moisture condition value	BS EN 13286-46:2003	Airdrie
	Test method for the determination of California bearing ratio, immediate bearing index and linear swelling -	BS EN 13286-47:2021	Airdrie
	Test method for the determination of the degree of pulverisation	BS EN 13286-48:2005	Airdrie
ROCK	Water content	The Complete ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 – 2006, Editors: R Ulusay & J A Hudson	Airdrie
	Porosity and density-by saturation and calliper techniques	The Complete ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 – 2006, Editors: R Ulusay & J A Hudson	Airdrie
	End preparation of rock specimens for compressive strength	ASTM D 4543-08	Airdrie
	Point load strength and anisotropy indices	ISRM Commission on Testing Methods, Suggested Method for Determining Point Load Strength 1985	Airdrie



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ROCK	<u>Mechanical & Physical Tests</u>		
	Unconfined compressive strength	ASTM D 7012/14 – Method C	Airdrie
	Unconfined compressive strength	The Complete ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 – 2006, Editors: R Ulusay & J A Hudson	Airdrie
CONCRETE	Slake Durability Index	The Complete ISRM Suggested Methods – Rock Characterization Testing and Monitoring 1974 – 2006, Editors: R Ulusay & J A Hudson	Airdrie
	<u>Chemical Tests</u>		
	Acid Soluble Chloride	BS 1881: Part 124 1988 TP031 using potentiometric titrimetry	Birmingham
	Determination of Acid Soluble Sulphate in Concrete	TP172 by ICP-OES	Birmingham
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil	Water content	BS EN ISO 17892-1:2014	Airdrie Birmingham Aston Clinton
	Bulk density - linear measurement method	BS EN ISO 17892-2:2014	Airdrie Birmingham Aston Clinton
	Determination of particle size distribution -sieving method	BS EN ISO 17892-4:2016	Airdrie Birmingham Aston Clinton
	Determination of particle size distribution -pipette method	BS EN ISO 17892-4:2016	Airdrie Birmingham Aston Clinton



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GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil (cont'd)	Determination of particle size distribution -hydrometer method	BS EN ISO 17892-4:2016	Airdrie
	Incremental loading oedometer test	BS EN ISO 17892-5: 2017	Airdrie Birmingham Aston Clinton
	Isotropically consolidated triaxial compression tests on water saturated soils	BS EN ISO 17892-9:2018	Birmingham Aston Clinton
	Determination of liquid limit by the fall cone method	BS EN ISO 17892-12 2018	Airdrie Birmingham Aston Clinton
	Determination of plastic limit	BS EN ISO 17892-12 2018	Airdrie Birmingham Aston Clinton
	Plasticity Index and Liquidity Index	BS EN ISO 17892-12 2018	Airdrie Birmingham Aston Clinton
SOILS for civil engineering purposes	<u>Mechanical & Physical Tests</u>		
	Moisture content - oven drying method	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
	Saturation moisture content of chalk	BS 1377:Part 2:1990	Aston Clinton
	Liquid limit - cone penetrometer	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton



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SOILS for civil engineering purposes (cont'd)	<u>Mechanical & Physical Tests</u>		
	Liquid limit - cone penetrometer - one point	BS 1377:Part 2:1990	Birmingham Aston Clinton
	Plastic limit	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
	Plasticity index and liquidity index	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
	Linear shrinkage	BS 1377:Part 2:1990	Aston Clinton
	Density – linear measurement	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
	Particle density - gas jar	BS 1377:Part 2:1990	Airdrie Aston Clinton
	Particle density - small pycnometer	BS 1377:Part 2:1990	Birmingham Aston Clinton
	Particle size distribution - wet sieving	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
	Particle size distribution - dry sieving	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton
Particle size distribution - sedimentation - pipette method	BS 1377:Part 2:1990	Airdrie Birmingham Aston Clinton	



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SOILS for civil engineering purposes (cont'd)	<u>Mechanical & Physical Tests</u>		
	Particle size distribution - sedimentation - hydrometer method	BS 1377:Part 2:1990	Airdrie
	Measurement of resistivity: Wenner probe method	BS 1377:Part 3:2018	Birmingham
	Determination of Thermal Conductivity of Soil and Soft Rock by Thermal Needle Probe Procedure	ASTM D5334-14	Birmingham
	Organic matter content	BS 1377:Part 3:2018 TP041 using titrimetry	Birmingham
	Mass loss on ignition	BS 1377:Part 3:2018 TP042 using muffle furnace	Airdrie Birmingham
	Dry density/moisture content relationship (2.5 kg rammer)	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton
	Dry density/moisture content relationship (4.5 kg rammer)	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton
	Dry density/moisture content relationship (vibrating hammer)	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton
California Bearing Ratio (CBR)	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton	
Moisture condition value (MCV) – natural moisture content	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	MCV/moisture content relation	BS 1377:Part 4:1990	Airdrie Birmingham Aston Clinton
	Chalk crushing value	BS 1377:Part 4:1990	Aston Clinton
	One-dimensional consolidation properties	BS 1377:Part 5:1990	Airdrie Birmingham Aston Clinton
	Swelling and collapse characteristics	BS 1377:Part 5:1990	Aston Clinton
	Permeability - constant head method	BS 1377:Part 5:1990	Aston Clinton
	Dispersibility - pinhole method	BS 1377:Part 5:1990	Aston Clinton
	Permeability in a triaxial cell	BS 1377:Part 6:1990	Airdrie Birmingham Aston Clinton
	Shear strength – small shearbox	BS 1377:Part 7:1990	Airdrie Birmingham Aston Clinton
	Shear strength – large shearbox	BS 1377:Part 7:1990	Birmingham Aston Clinton
	Unconfined compressive strength - load frame method	BS 1377:Part 7:1990	Birmingham Aston Clinton
Residual strength - small ring shear apparatus	BS 1377:Part 7:1990	Birmingham	
Hand Held Shear Vane	NZ Geotechnical Society Inc Aug 2001	Airdrie	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	<u>Mechanical & Physical Tests</u>		
	Undrained shear strength - triaxial compression without measurement of pore pressure	BS 1377:Part 7:1990	Airdrie Birmingham Aston Clinton
	Undrained shear strength – triaxial compression with multistage loading and without measurement of pore pressure	BS 1377:Part 7:1990	Airdrie Birmingham Aston Clinton
	Effective shear strength - consolidated-undrained triaxial compression test with measurement of pore pressure	BS 1377:Part 8:1990	Birmingham Aston Clinton
	Effective shear strength - consolidated-drained triaxial compression test with measurement of volume change	BS 1377:Part 8:1990	Birmingham Aston Clinton
	Uniformity coefficient	Specification for Highway Works table 6/1 footnote 5	Airdrie Birmingham Aston Clinton
	Effective angle of internal friction and effective cohesion	Specification for Highway Works, HMSO February 2016 Clause 636 using Large Shearbox	Birmingham Aston Clinton
Coefficient of friction and adhesion between fill and reinforcing elements or anchor elements	Specification for Highway Works, HMSO February 2016 Clause 639 using Large Shearbox	Birmingham Aston Clinton	
Effective shear strength - (isotropically) consolidated undrained multistage triaxial compression test with measurement of pore pressure	Documented in-house method No TP 120	Birmingham Aston Clinton	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	<u>Mechanical & Physical Tests</u>		
	Effective shear strength - (isotropically) consolidated drained multistage triaxial compression test with measurement of volume change	Documented in-house method No TP 120	Birmingham Aston Clinton
	Horizontal permeability of road drainage layers - using the permeability box	DTp HA 41/17	Aston Clinton
	Moisture condition value – at natural moisture content	SDD Tech Memo SH7/83. SDD Appls Guide No1 (Rev 1989)	Airdrie Birmingham Aston Clinton
	Verification of MCA free-fall property - optical method	Documented In-House Method TP:07	Airdrie
	In-situ density - sand replacement method (small pouring cylinder)	BS 1377:Part 9:1990	Site: Birmingham Aston Clinton
	In-situ density - sand replacement method (large pouring cylinder)	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	In-situ density - core cutter method	BS 1377:Part 9:1990	Site: Airdrie Aston Clinton
	In-situ bulk density - nuclear method - comparative tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
In-situ bulk density - nuclear method - absolute tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton	



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SOILS for civil engineering purposes (cont'd)	<u>Mechanical & Physical Tests</u>		
	In-situ bulk density - nuclear method - compliance tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	In-situ moisture density - nuclear method - comparative tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	In-situ moisture density - nuclear method - absolute tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	In-situ moisture density - nuclear method - compliance tests	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	In-situ California Bearing Ratio (CBR)	BS 1377:Part 9:1990	Site: Airdrie Birmingham Aston Clinton
	Vertical deformation and strength characteristics of soil by the plate loading test	BS 1377:Part 9:1990	Site: Airdrie Aston Clinton Birmingham
Determination of equivalent CBR value using the plate bearing test (loads from 1 to 500 kN)	Design Manual for Roads and Bridges. Volume 7: Pavement Design and Maintenance. HD 25/94:Foundations	Site: Airdrie Aston Clinton Birmingham	
Moisture condition value – at natural moisture content	SDD Tech Memo SH7/83. SDD Appls Guide No1 (Rev 1989)	Site: Airdrie	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ASBESTOS IN BULK MATERIALS including materials and products suspected of containing asbestos	<u>Health and Hygiene</u> Identification of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite	Health and Safety Executive - Asbestos: The Analysts' Guide (HSG 248) – 2021 Documented In-House Method TP181 using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248	Birmingham
ASBESTOS IN SOILS – The Identification of Asbestos fibres in bulk samples of Soil, specifically: Soil Sediment Aggregate	Identification of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite	Documented In-House Method TP183 for identification using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248	Birmingham
ASBESTOS IN SOILS – The Identification and Quantification of Asbestos fibres in bulk samples of Soil, specifically: Soil Sediment Aggregate,	Identification and Quantification of Asbestos content of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite	Documented In-House Method TP183 for identification using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248. Documented In-House Method TP183 for quantification of asbestos.	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS	<u>Chemical Tests</u>		
	Determination of the Initial Consumption of Lime (ICL)	TP173	Birmingham
	Acid Extractable Metals in Soil		
	Arsenic Barium Beryllium Cadmium Chromium Copper Mercury Manganese Molybdenum Nickel Lead Antimony Selenium Vanadium Zinc	TP137 using inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES)	Birmingham
	Total Sulphur in soil	TP129 using inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES)	Birmingham
	Organic matter	TP041 using tirimetry (BS 1377: Part 3: 1990)	Birmingham
	Water soluble boron	TP032 (ICP-OES)	Birmingham
	Water soluble chloride	TP 134 using potentiometric titration	Birmingham
	pH	TP0 19 using pH electrode (BS 1377: Part 3: 1990)	Birmingham
	Acid Soluble Sulphide	TP0 51 using colorimetry	Birmingham
	Loss on ignition	TP042 using muffle furnace (BS 1377: Part 3: 1990)	Birmingham
	Determination of Total Organic Carbon (TOC)	TP174 combustion NDIR	Birmingham



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SOILS (cont'd)	<u>Chemical Tests</u> (cont'd)		
	Water Soluble Sulphate	TP169 using ICP-OES	Birmingham
	Acid soluble sulphate	TP171 using ICP-OES	
	Cyanide: Free Total Complex	TP047 using colorimetry TP048 using colorimetry TP049 by calculation	Birmingham
	Phenols in soil	TP046 using colorimetry	Birmingham
	Acid Soluble Sulphide	TP 051 using colorimetry	Birmingham
	Polychlorinated Biphenyls (PCB's): PCB Congener 28 PCB Congener 52 PCB Congener 101 PCB Congener 118 PCB Congener 138 PCB Congener 153 PCB Congener 180	TP 110 using gas chromatography mass spectrometry (GC-MS)	Birmingham
	Speciated Polyaromatic hydrocarbons (PAHs) Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a) pyrene Indeno(123cd)pyrene Dibenz(ah)anthracene Benzo(ghi)perylene Total PAH (16)	TP045 using gas chromatography mass spectrometry (GC-MS) SIM	Birmingham



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SOILS (cont'd)	<u>Chemical Tests</u> (cont'd)		
	Extractable Petroleum Hydrocarbons >C8-C40 including	TP067 using gas chromatography with flame ionisation detection (GC-FID)	Birmingham
	Extractable Petroleum Hydrocarbons - aromatic/aliphatic fractionation and quantification according to carbon banding: >C8-C10 >C10-C12 >C12-C16 >C16-C21 >C21-C40	TP126 using gas chromatography with flame ionisation detection (GC-FID)	Birmingham
	Semivolatile Organic Compounds (SVOC): Phenol Aniline bis(2-chloroethyl)ether 2-Chlorophenol 1,3-Dichlorobenzene Benzyl alcohol 1,4-Dichlorobenzene 1,2-Dichlorobenzene o-Cresol p-Cresol Hexachloroethane N-Nitroso-n-propylamine Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol bis(2-chloroethoxy)methane 2,4-Dichlorophenol 1,3,5-Trichlorobenzene 1,2,4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 1,2,3-Trichlorobenzene 4-Chloro-3-methylphenol Hexachlorocyclopentadiene 2,4,6-Trichlorophenol	TP 145 SVOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Semivolatile Organic Compounds (SVOC) (cont'd) 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-methylnaphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline Dimethyl phthalate 2,4-Dinitrotoluene Acenaphthylene Acenaphthene 2,4-Dinitrophenol Pentachlorobenzene 4-Nitrophenol Dibenzofuran 2,4- Dinitrotoluene Diethyl phthalate Fluorene Diphenylamine Azobenzene 4-Bromophenyl phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Carbazole Di-n-butyl phthalate Fluoranthene Pyrene Benzyl butyl phthalate Chrysene Di-n-octyl phthalate bis(2-ethylhexyl)phthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(ghi)perylene Acetophenone Total PAH (16)	TP 145 SVOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Volatile Organic Compounds (VOCs): 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,3-Dichloropropane 1,4-Dichlorobenzene 2,2-Dichloropropane 2-Chlorotoluene 4-Chlorotoluene Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane Ethylbenzene Isopropylbenzene m,p-Xylene Methylene Chloride o-Xylene Propylbenzene sec-Butylbenzene	TP 154 VOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Volatile Organic Compounds (VOCs) (cont'd): Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane Vinyl Chloride ARO C7 ARO >C8-C10 GRO C5-C6 GRO C6-C8 GRO C8-C10 GRO C5-C10 Acetone Methyl Ethyl Ketone 3-Pentanone 3-Methyl-2-Butanone 4-Methyl-2-Pentanone 2-Hexanone Butyl Acetate Ethyl Acetate Isopropyl Acetate Methyl Acetate Propyl Acetate Vinyl Acetate	TP 154 VOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Groundwater & potable water (non-regulatory)	<u>Chemical Tests</u>		
	Dissolved Metals: Silver Arsenic Barium Beryllium Cadmium Cobalt Chromium Copper Mercury Manganese Molybdenum Nickel Lead Antimony Selenium Strontium Vanadium Zinc	TP156 - Determination of Dissolved Metals in Water (ICP-MS)	Birmingham
	Boron	TP054 (ICP-OES)	Birmingham
	pH	TP020 using pH electrode (BS 1377: Part 3: 1990)	Birmingham
	Phenol	TP060 using colorimetry	Birmingham
	Cyanide: Free Total Complex	TP061 using colorimetry TP062 using colorimetry TP063 by calculation	Birmingham
	Sulphide	TP0 66 using colorimetry	Birmingham
	Fluoride	TP 080 by ISE	Birmingham
	Dissolved solids	TP 035 by gravimetry	Birmingham
	Suspended solids	TP 081 by gravimetry	Birmingham
	Conductivity	TP 108 by conductivity meter	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Groundwater & potable water (non-regulatory) (cont'd)	Total Alkalinity	TP 118 by titrimetry	Birmingham
	Semivolatile Organic Compounds (SVOC): 1,2,4-trichlorobenzene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 2,4,5-trichloropehnol 2,4,6-trichlorophenol 2,4-dichlorophenol 2,4-dimethylphenol 2, 4-dinitrophenol 2, 4-dinitrotoluene 2, 6-dinitrotolunene 2-chloronaphthalene 2-chlorophenol 2-methylnaphthalene 2-methylphenol 2-nitroaniline 2-nitrophenol 3-nitroaniline 4-bromophenylphenylether 4-chloro-3-methyl phenol 4-chloroaniline 4-chlorophenyl phenyl ether 4-methylphenol 4-nitroaniline 4-nitrophenol Acenaphthene Acenaphthylene Aniline Anthracene Azobenzene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzyl alcohol Bis(2-chloroethoxy)methane Bis(2-chloroethyl)ether Bis(2-ethylhexyl)phthalate Butyl benzyl phthalate Carbazole	TP128 using gas chromatography mass spectrometry (GC-MS) scan	Birmingham



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

TERRA TEK Limited

Issue No: 075 Issue date: 11 October 2022

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Groundwater & potable water (non-regulatory) (cont'd)	<u>Chemical Tests</u> (cont'd)		
	Semivolatile Organic Compounds (SVOCs) (cont'd): Chrysene Dibenz(a, h)anthracene Dibenzofuran Diethylphthalate Dimethylphthalate Di-n-butyl phthalate Di-n-octyl phthalate Diphenylamine Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Ideno(1, 2, 3-cd)pyrene Isophorone Naphthalene Nitrobenzene n-nitroso-di-n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene Total PAH (16)	TP128 using gas chromatography mass spectrometry (GC-MS) scan	Birmingham
	Speciated Polyaromatic hydrocarbons (PAHs) Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo (a) anthracene Chrysene Benzo (b) fluoranthene Benzo (k) fluoranthene Benzo(a) pyrene Indeno(123cd)pyrene	TP128 using gas chromatography mass spectrometry (GC-MS) SIM	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<p>WATERS Groundwater & potable water (non-regulatory) (cont'd)</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Speciated Polyaromatic hydrocarbons (PAHs) (cont'd)</p> <p>Dibenz(ah)anthracene Benzo(ghi)perylene Total PAH (16)</p>	<p>TP128 using gas chromatography mass spectrometry (GC-MS) SIM</p>	
<p>WATERS Groundwater, surface water, potable water (non-regulatory) and prepared leachate</p>	<p>Volatile Organic Compounds (VOCs):</p> <p>1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,3-Dichloropropane 1,4-Dichlorobenzene 2,2-Dichloropropane 2-Chlorotoluene 4-Chlorotoluene 4-Isopropyltoluene Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene</p>	<p>TP 155 VOC by HS-GCMS</p>	<p>Birmingham</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Groundwater, surface water, potable water (non-regulatory) and prepared leachate (cont'd)	<u>Chemical Tests</u> (cont'd) Volatile Organic Compounds (VOCs): (cont'd) Dibromochloromethane Dibromomethane Dichlorodifluoromethane Ethylbenzene Isopropylbenzene m,p-Xylene Methylene Chloride n-Butyl Benzene o-Xylene Propylbenzene sec-Butylbenzene Styrene tert-Butylbenzene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane Vinyl Chloride Methyl-tert-Butyl Ether (MTBE) tert-Amyl Methyl Ether (TAME) tert-Butyl Alcohol (TBA) Diisopropyl Ether (DIPE) Ethyl-tert-Butyl Ether (ETBE) ALI C5-C6 ALI >C6-C8 ALI >C8-C10 ARO C6 ARO C7 ARO >C8-C10 GRO C5-C6 GRO >C6-C8 GRO >C8-C10 GRO C5-C10	TP 155 VOC by HS-GCMS	Birmingham
	Determination of Dissolved Organic Carbon (DOC)	TP162 Combustion NDIR	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS potable (non-regulatory) water, surface water, ground water, prepared leachate and landfill leachate	Determination of chloride, fluoride, nitrite, hexavalent chromium, ammonia & alkalinity (as CaCO ₃).	TP184 discrete analyser	Birmingham
WATERS Surface Waters and Groundwater	Determination of Hardness in Water	TP117 by ICP-OES	Birmingham
	Determination of Sulphate in Water	TP170 by ICP-OES	Birmingham
	Determination of Chemical Oxygen Demand (COD)	TP133 UV-Vis Spectroscopy	Birmingham
Effluent	Suspended solids	TP081 – by gravimetry	Birmingham
SOILS	<u>Chemical Tests</u>	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil	
	Arsenic Barium Beryllium Cadmium Chromium Copper Mercury Manganese Molybdenum Nickel Lead Vanadium Zinc	TP137 using inductively Coupled Plasma Optical Emission Spectroscopy (ICP- OES)	Birmingham
	Total Sulphur in soil	TP129 using inductively Coupled Plasma Optical Emission Spectroscopy (ICP- OES)	Birmingham
	pH	TP019 using pH electrode (BS 1377: Part 3: 1990)	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil	
	Monohydric phenol	TP 06 using colorimetry	Birmingham
	Cyanide: Total	TP 048 using colorimetry	Birmingham
	Polychlorinated Biphenyls (PCB's): PCB Congener 28 PCB Congener 52 PCB Congener 101 PCB Congener 118 PCB Congener 138 PCB Congener 153 PCB Congener 180	TP 110 using gas chromatography mass spectrometry (GC-MS)	Birmingham
	Speciated Polyaromatic hydrocarbons (PAHs): Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(b)fluoranthene Benzo(a) pyrene	TP045 using gas chromatography mass spectrometry (GC-MS)	Birmingham
	Extractable Petroleum Hydrocarbons: >C8-C40	TP067 using gas chromatography with flame ionisation detection (GC-FID)	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil	
	SVOC in soil: Phenol bis(2-chloroethyl)ether 2-Chlorophenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene o-Cresol p-Cresol Hexachloroethane N-Nitroso-n-propylamine	TP 145 SVOC by GCMS	Birmingham
	Acid Soluble Sulphide	TP051 using colorimetry	Birmingham
	Loss on ignition	TP042 using muffle furnace (BS 1377:Part 3:1990)	Birmingham
	Water Soluble Sulphate	TP169 using ICP-OES	Birmingham
	Acid soluble sulphate	TP171 using ICP-OES	
	Water soluble chloride	TP 134 using potentiometric titration	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Semivolatile Organic Compounds (SVOCs): Nitrobenzene Isophorone 2-Nitrophenol bis(2-chloroethoxy)methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 1,2,3-Trichlorobenzene 4-Chloro-3-methylphenol 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-methylnaphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline Dimethyl phthalate 2,4-Dinitrotoluene Acenaphthylene Acenaphthene Pentachlorobenzene Dibenzofuran 2,4-Dinitrotoluene Diethyl phthalate Fluorene Diphenylamine Azobenzene 4-Bromophenyl phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Carbazole Di-n-butyl phthalate	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil TP 145 SVOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Semivolatile Organic Compounds (SVOCs): (cont'd) Fluoranthene Pyrene Benzyl butyl phthalate Chrysene Di-n-octyl phthalate bis(2-ethylhexyl)phthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(ghi)perylene Acetophenone Total PAH (16) Pentachlorophenol Phenanthrene Anthracene Carbazole Di-n-butyl phthalate Fluoranthene Pyrene Benzyl butyl phthalate Chrysene Di-n-octyl phthalate bis(2-ethylhexyl)phthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(ghi)perylene Acetophenone Total PAH (16)	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil TP 145 SVOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Volatile Organic Compounds (VOCs): 1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichloropropane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichloropropane 2,2-Dichloropropane 2-Chlorotoluene 4-Chlorotoluene 4-Isopropyltoluene Benzene Bromobenzene Bromochloromethane Bromodichloromethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane Ethylbenzene Isopropylbenzene m,p-Xylene	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil TP 154 VOC by GCMS	Birmingham



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Volatile Organic Compounds (VOCs) (cont'd): o-Xylene Propylbenzene sec-Butylbenzene Tert-Butylbenzene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane Vinyl Chloride Methyl-tert-Butyl Ether (MTBE) tert-Amyl Methyl Ether (TAME) tert-Butyl Alcohol (TBA) Diisopropyl Ether (DIPE) Ethyl-tert-Butyl Ether (ETBE) ALI C5-C6 ALI >C6-C8 ALI >C8-C10 ARO C6 ARO C7 ARO >C8-C10 GRO C5-C6 GRO C6-C8 GRO C8-C10 GRO C5-C10 Acetone Methyl Ethyl Ketone 3-Pentanone 3-Methyl-2-Butanone 4-Methyl-2-Pentanone 2-Hexanone Butyl Acetate Ethyl Acetate Vinyl Acetate	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil TP 154 VOC by GCMS	Birmingham
END			

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 2643 Accredited to ISO/IEC 17025:2017	MATtest Limited	
	Issue No: 025	Issue date: 20 December 2022
	10 Queenslie Point Queenslie Industrial Estate 120 Stepps Road Glasgow G33 3NQ	Contact: Mr T McLlland ██████████ ██████████ E-Mail: ██████@mattest.org Website: www.mattest.org
Testing performed by the Organisation at the locations specified below		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address 10 Queenslie Point Queenslie Industrial Estate 120 Stepps Road Glasgow G33 3NQ Contact: Mr T McLlland	Aggregates, Bituminous Mixtures, Concrete, Rock & Soils	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Address All locations suitable for the activities listed Contact: Mr T McLlland	Concrete & Soils	X



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MATtest Limited

Issue No: 025 **Issue date:** 20 December 2022

Testing performed by the Organisation at the locations specified

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Aggregate crushing value - particle size 10 mm and greater	BS 812-110:1990	A
	Ten per cent fines value - dry - particle size 10 mm and greater	BS 812-111:1990	A
	Ten per cent fines value - soaked - particle size 10 mm and greater	BS 812-111:1990	A
	Aggregate impact value - dry	BS 812-112:1990	A
	Aggregate impact value - soaked	BS 812-112:1990	A
	Frost heave	BS 812-124:2009	A
	Particle size distribution - sieving method	BS EN 933-1:2012	A
	Flakiness index	BS EN 933-3:2012	A
	Shape index	BS EN 933-4:2008	A
	Micro-Deval coefficient	BS EN 1097-1:2011	A
	Resistance to fragmentation by the Los Angeles test method	BS EN 1097-2:2020	A
	Loose bulk density and voids	BS EN 1097-3:1998	A
	Water content	BS EN 1097-5:2008	A
Particle density and water absorption - pycnometer method for aggregate particles between 4 mm and 31,5 mm	BS EN 1097-6:2022	A	



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Issue No: 025 **Issue date:** 20 December 2022

Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES (cont'd)	Particle density and water absorption - pycnometer method for aggregate particles between 0,063 mm and 4 mm	BS EN 1097-6:2022	A
	Aggregate abrasion value	BS EN 1097-8:2020	A
	Magnesium sulfate test (excluding simple petrographical description)	BS EN 1367-2:2009	A
	Drying shrinkage	BS EN 1367-4:2008	A
	Water-soluble chloride salts using the Volhard method (reference method)	BS EN 1744-1:2009	A
	Water-soluble sulfates	BS EN 1744-1:2009 +A1:2012	A
	Acid soluble sulfates	BS EN 1744-1:2009 +A1:2012	A
BITUMINOUS MIXTURES for roads and other paved areas	Soluble binder content by difference, using bottle rotation machine and pressure filter	BS EN 12697-1:2020	A
	Particle size distribution	BS EN 12697-2:2015+A1:2019	A
	Maximum density - volumetric procedure	BS EN 12697-5:2018	A
	Bulk density - dry - saturated surface dry (SSD) - sealed specimen	BS EN 12697-6:2020	A
	Determination of air void content	BS EN 12697-8:2018	A
	Conventional refusal density - vibratory compaction	BS EN 12697-9:2002	A
	Percentage refusal density (PRD) - vibratory compaction	BS EN 12697-9:2002	A
	Preparation of samples for determining binder content, water content and grading	BS EN 12697-28:2020	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
BITUMINOUS MIXTURES for roads and other paved areas (cont'd)	Laboratory compaction of bituminous mixtures by vibratory compaction	BS EN 12697-32:2019	A
	Hot sand test for the adhesivity of binder on precoated chippings for HRA	BS EN 12697-37:2003	A
CONCRETE - hardened	Compressive strength of cores	BS EN 12504-1:2019	A
	Compressive strength of cubes	BS EN 12390-3:2019	A
	Curing	BS EN 12390-2:2019	A
	Shape, dimensions	BS EN 12390-1:2021	A
	Density	BS EN 12390-7:2019+AC:2020	A
ROCK	Uniaxial compressive strength	ASTM D7012-14	A
	End preparation of rock specimens for compressive strength	ASTM D 4543-19	A
	Elastic modulus	ASTM D7012-14	A
	Point load strength and anisotropy indices	ISRM Commission on Testing Methods. Suggested Method for Determining Point Load Strength 1985	A
	Water content - method 1	ISRM Suggested Methods - Rock Characterization Testing and Monitoring. Ed. ET Brown - 1981	A
	Slake durability index	ISRM Suggested Methods - Rock Characterization Testing and Monitoring. Ed. ET Brown - 1981	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes	Water content - oven drying method	BS 1377-2:2022 BS 1377-2:1990	A
	Liquid limit - cone penetrometer	BS 1377-2:2022 BS 1377-2:1990	A
	Liquid limit - cone penetrometer - one point	BS 1377-2:2022 BS 1377-2:1990	A
	Plastic limit	BS 1377-2:2022 BS 1377-2:1990	A
	Plasticity index	BS 1377-2:2022 BS 1377-2:1990	A
	Density - linear measurement	BS 1377-2:2022 BS 1377-2:1990	A
	Particle density - gas jar	BS 1377-2:2022 BS 1377-2:1990	A
	Particle size distribution - wet sieving - dry sieving	BS 1377-2:2022 BS 1377-2:1990	A
	Particle size distribution - sedimentation by the pipette method	BS 1377-2:2022 BS 1377-2:1990	A
	Organic matter content	BS 1377-3:2018+A1:2021	A
	Mass loss on ignition	BS 1377-3:2018+A1:2021	A
	Determination of water-soluble sulfate in soil: gravimetric method - acid extract - water extract	BS 1377-3:2018+A1:2021	A
	Carbonate content - rapid titration method	BS 1377-3:2018+A1:2021	A
	Water-soluble chloride content	BS 1377-3:2018+A1:2021	A
	Acid-soluble chloride content	BS 1377-3:2018+A1:2021	A
Total dissolved solids	BS 1377-3:2018+A1:2021	A	
pH value	BS 1377-3:2018+A1:2021	A	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	Dry density/moisture content relationship - 2.5 kg rammer - 4.5 kg rammer - vibrating hammer	BS 1377-2:2022 BS 1377-4:1990	A
	Moisture condition value (MCV)	BS 1377-2:2022 BS 1377-4:1990 TRL Report 273:1997	A
	MCV/moisture content relationship	BS 1377-2:2022 BS 1377-4:1990	A
	California Bearing Ratio (CBR)	BS 1377-2:2022 BS 1377-4:1990	A
	One-dimensional consolidation properties	BS 1377-2:2022 BS 1377-5:1990	A
	Shear strength by direct shear (small shearbox apparatus)	BS 1377-2:2022 BS 1377-7:1990	A
	Shear strength by direct shear (large shearbox apparatus)	BS 1377-2:2022 BS 1377-7:1990	A
	Undrained shear strength in triaxial compression without measurement of pore pressure (definitive method)	BS 1377-2:2022 BS 1377-7:1990	A
	Undrained shear strength in triaxial compression with multistage loading and without measurement of pore pressure	BS 1377-2:2022 BS 1377-7:1990	A
	Determination of effective angle of internal friction and effective cohesion of earthworks materials (using 300mm shearbox)	MCHW SHW HMSO Feb 2016 Clause 636	A
Determination of coefficient of friction and adhesion between fill and reinforcing elements for reinforced soil and anchored earth structures	MCHW SHW HMSO Feb 2016 Clause 639	A	



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
GEOTECHNICAL INVESTIGATION and TESTING - Laboratory testing of soil	Water content	BS EN ISO 17892-1:2014+A1:2022	A
	Bulk density - linear measurement	BS EN ISO 17892-2:2014	A
	Determination of particle density	BS EN ISO 17892-3:2015	A
	Determination of particle size distribution -sieving method -pipette method	BS EN ISO 17892-4:2016	A
	Incremental loading oedometer test	BS EN ISO 17892-5: 2017	A
	Unconsolidated undrained triaxial test	BS EN ISO 17892-8:2018	A
	Direct Shear Tests – small shearbox – large shearbox	BS EN ISO 17892-10:2018	A
	Determination of liquid limit by fall cone method	BS EN ISO 17892-12:2018 +A1:2021	A
Determination of plastic limit	BS EN ISO 17892-12:2018 +A1:2021	A	
UNBOUND & HYDRAULICALLY BOUND MIXTURES	Laboratory reference density and water content - vibrating hammer	BS EN 13286-4:2021	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SITE TESTS			
CONCRETE - fresh	Sampling fresh concrete on site - composite sample - spot sample	BS EN 12350-1:2019	X
	Slump	BS EN 12350-2:2019	X
	Flow	BS EN 12350-5:2019	X
	Air content - pressure gauge method	BS EN 12350-7:2019	X
	Making cubic specimens for strength tests	BS EN 12390-2:2019	A X
SOILS for civil engineering purposes	In-situ California Bearing Ratio (CBR)	BS 1377-9:1990	X
END			

K.3 Geotechnical Laboratory Schedules

Title	Reference
Schedule of Geotechnical Laboratory Test Notices/Clarifications	K.3.1

K.3.1 Schedule of Geotechnical Laboratory Test Notices/Clarifications

Table K.2: Schedule of Geotechnical Laboratory Test Notices/Clarifications

Laboratory Abortive Test Notice Reference	Exploratory Location ID	Sample Top Depth [m BGL]	Sample Type	Sample Reference	Tests Scheduled	Restriction	Further Instruction
ATN 001	MS-BH05	19.42	C	4	UCS	Fractured sample. Insufficient intact material to obtain UCS specimen.	Undertake Point Load Test Axial and Diametric
ATN 002	BH104	15.70	D	35	AL	Insufficient material to perform test.	Use sample at 15.00mbgl
ATN 003	MS-BH15	18.44	C	5	UCS	Insufficient material. Length/diameter ratio <1:1.	Undertake point load test axial and diametric
ATN 004	MS-BH11	24.42	C	15	UCS	Insufficient material. Length/diameter ratio only 1.1:1.	Undertake Point load
ATN 005	DS106	0.10	B	3	PSD	Asbestos detected below.	Test Cancelled
ATN 006	DS106	0.40	B	6	PSD	Asbestos detected.	Test Cancelled
ATN 007	MS-BH25	0.20	B	6	PSD	Asbestos detected below.	Test Cancelled
ATN 008	MS-BH25	0.60	B	8	PSD	Asbestos detected.	Test Cancelled
ATN 009	BH106	15.20	D	49	AL	Insufficient material.	Test Cancelled
ATN 010	MS-BH27	3.20	UT	13	UUT	Insufficient material. Scheduled Oedometer to be performed.	Test Cancelled
ATN 011	MS-BH26	4.40	UT	16	UUT	Insufficient material. Scheduled Oedometer to be performed.	Test Cancelled
ATN 012	AR-BH01	22.47	C	44	UCS	Sample fractured. L/D < 1	Axial PLT

Laboratory Abortive Test Notice Reference	Exploratory Location ID	Sample Top Depth [m BGL]	Sample Type	Sample Reference	Tests Scheduled	Restriction	Further Instruction
ATN 013	MS-BH18	19.27	C	52	UCS	Sample fractured. L/D = 1	Axial and diametric PLT
ATN 014	MS-BH04	23.40	C	51	UCS	Sample fractured. L/D = 1.2	Axial and diametric PLT
ATN 015	MS-BH04	34.70	C	64	UCS	Sample fractured. L/D = 1	Axial PLT
ATN 016	MS-BH10	37.16	C	62	UCS	Sample fractured. L/D < 1	Axial and diametric PLT
ATN 017	MS-BH10	38.20	C	63	UCS	Sample fractured. L/D = 1.2	Axial and diametric PLT
ATN 018	MS-BH18	15.49	C	46	UCS	Unsuitable material. Clay.	UUT with cell pressure 310kPa
ATN 019	MS-BH24	24.39	C	15	UCS	Insufficient material. L/D = 1.5	Axial and Diametric PLT
ATN 020	BH106	1.20	B	7	PSD	Asbestos detected.	Test Cancelled
ATN 021	MS-BH13	38.54	C	24	UCS	Insufficient material. Length/diameter ratio only 1.1:1.	Axial and Diametric PLT
ATN 022	MS-BH21	23.77	C	14	UCS	Insufficient material. Length/diameter ratio only 1:1.	Axial and Diametric PLT
ATN 023	AR-BH02	0.3	B	6	Compaction Test (2.5 kg rammer)	Insufficient material to perform test.	Test Cancelled
ATN 024	BH103	2	B	12	Compaction Test (2.5 kg rammer);#Small Shear Strength by Direct Shear - 60 mm	Insufficient material to perform Compaction test. As no Compaction test will be performed we are unable to obtain recompacting data for Shearbox test.	Test Cancelled

Laboratory Abortive Test Notice Reference	Exploratory Location ID	Sample Top Depth [m BGL]	Sample Type	Sample Reference	Tests Scheduled	Restriction	Further Instruction
ATN 025	MS-BH13	3.8	B	17	Particle Size Distribution	Sample not received. Testing moved to B20 as instructed.	Test Cancelled
ATN 026	AR-BH02	0.7	B	9	California Bearing Ratio	Compaction and PSD performed on B9 and B11 combined but insufficient material for CBR test.	Test Cancelled
ATN 027	BH101	0.5	B	5	California Bearing Ratio	Insufficient material to perform test.	Test Cancelled
ATN 028	HR-BH01	0.7	B	6	California Bearing Ratio	Insufficient material to perform test.	Test Cancelled
<p>Notes BGL = Below ground level AL = Atterberg Limits PSD = Particle Size Distribution UUT = Unconsolidated Undrained Triaxial UCS = Uniaxial Compressive Strength PLT = Point Load Strength Index</p>							

K.4 Geotechnical Laboratory Test Results

Title	Reference
Fugro Laboratory Results	K.4.1
Subcontractor Laboratory Results	K.4.2

K.4.1 Fugro Laboratory Results

Title	Reference
Classification	Referenced by Location ID
Water Content	
Bulk Density	
Atterberg Limit	
Particle Size Distribution	
Linear Shrinkage	
Compaction-Related	Referenced by Location ID
Dry density/moisture content relationship 2.5kg rammer	
California Bearing Ratio	
Soil Shear Strength (Total Stress)	Referenced by Location ID
Undrained strength of a single 100 mm diameter specimen in triaxial compression without the measurement of pore pressure	
Shear Strength by Direct Shear (Small Shearbox Apparatus)	
Geotechnical Chemistry Testing	Referenced by Location ID
Loss On Ignition	
Organic Matter Content	
Sulphate content of water extract from soil	
pH value	
Sulphur as S, Total	
Sulphate as SO ₄ , Total	
Rock Testing	Referenced by Location ID
Uniaxial compressive strength	
Measurement of point load strength index of rock specimen	
Rock Water Content	

LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.7

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.8

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.90
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	16/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.0

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly sandy SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	28.2

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.0

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:					

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.8

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.50
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6

Test Data	
Date of Test	16/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.6

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.8

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	12.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.3

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	20.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	14.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	26.0

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.3

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.60
Specimen Description	Brown clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	24.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.20
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.0

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.1

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	20.0

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content

BS EN ISO 17892-1:2014



1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14

Test Data	
Date of Test	08/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.4

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	23.8

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.9

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	29

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.2

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.20
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	27.2

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	7.30
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.30
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.3

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.80
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	25.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	29.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.1

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	

LABORATORY TEST CERTIFICATE
Determination of Water Content

BS EN ISO 17892-1:2014



1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25

Test Data	
Date of Test	08/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	23.3

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	40

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.8

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.90
Specimen Description	Grey brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	46

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.9

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	5

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.2

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	22.8

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	24.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.7

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	6.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.00
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	8

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10

Test Data	
Date of Test	16/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	11.4

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.7

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.20
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23

Test Data	
Date of Test	16/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.1

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	15.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.50
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.70
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	20.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	29.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	7.50
Specimen Description	Brown slightly gravelly SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.3

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.20
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.8

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	18/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	11.2

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.6

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37

Test Data	
Date of Test	16/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.6

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.30
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.8

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.30
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	30.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH101
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	52

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH102
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.50
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	45

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	22.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH102
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	53

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.7

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.50
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	44

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	36.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



BS EN ISO 17892-1:2014

1483

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.50
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	53

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	27.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	57

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	16.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	60

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH104
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	34.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content

BS EN ISO 17892-1:2014



1483

Project Reference	F212561	Location ID	BH104
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.70
Specimen Description	Grey silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	50.2

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH104
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	22.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH104
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	17.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH105
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	20.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH105
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.70
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	27.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH105
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	32.5

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.30
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.6

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	DS107
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.10
Specimen Description	Brown clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	2

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	7.6

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	DS107
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	12.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	DS108
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Grey silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	20.9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content

BS EN ISO 17892-1:2014



1483

Project Reference	F212561	Location ID	DS109
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.50
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13

Test Data	
Date of Test	05/01/2023
Oven Temperature [°C]	105.0
Water Content [%]	19.7

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	DS109
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Grey slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	21.6

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.20
Specimen Description	Grey brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	28

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	22.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	12.1

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.80
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	25.7

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.30
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	28

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.0

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.30
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32

Test Data	
Date of Test	02/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	15.4

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Water Content



1483

BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	05/01/2023
Oven Temperature [°C]	105.0
Water Content [%]	24.8

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE
Determination of Water Content

BS EN ISO 17892-1:2014



1483

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13

Test Data	
Date of Test	05/01/2023
Oven Temperature [°C]	105.0
Water Content [%]	25.0

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Bulk Density by Linear Measurement Method



BS EN ISO 17892-2:2014, clause 5.1

1483

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly sandy SILT	Sample Type	UT
Specimen Reference		Specimen Depth [m]	3.81
		Sample Reference	14

Test Data	
Date of Test	01/12/2022
Condition of Specimen	Undisturbed
Mass of Specimen [g]	3516.70
Water Content [%]	22.6
Bulk Density [Mg/m ³]	2.12
Dry Density [Mg/m ³]	1.73

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:					

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Bulk Density by Linear Measurement Method



1483

BS EN ISO 17892-2:2014, clause 5.1

Project Reference	F212561		Location ID	MS-BH27	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	1.20	
Specimen Description	Brown SAND		Sample Type	UT	
Specimen Reference		Specimen Depth [m]	1.23	Sample Reference	7

Test Data	
Date of Test	02/12/2022
Condition of Specimen	Undisturbed
Mass of Specimen [g]	158.71
Water Content [%]	18.6
Bulk Density [Mg/m ³]	1.92
Dry Density [Mg/m ³]	1.62

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Bulk Density by Linear Measurement Method



1483

BS EN ISO 17892-2:2014, clause 5.1

Project Reference	F212561		Location ID	MS-BH27	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	1.80	
Specimen Description	Brown SAND		Sample Type	UT	
Specimen Reference		Specimen Depth [m]	1.81	Sample Reference	9

Test Data	
Date of Test	02/12/2022
Condition of Specimen	Undisturbed
Mass of Specimen [g]	3506.60
Water Content [%]	19.1
Bulk Density [Mg/m ³]	2.09
Dry Density [Mg/m ³]	1.75

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	11/12/2022	

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Bulk Density by Linear Measurement Method



1483

BS EN ISO 17892-2:2014, clause 5.1

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.60
Specimen Description	Brown SAND	Sample Type	UT
Specimen Reference		Specimen Depth [m]	2.61
		Sample Reference	11

Test Data	
Date of Test	02/12/2022
Condition of Specimen	Undisturbed
Mass of Specimen [g]	3506.20
Water Content [%]	20.0
Bulk Density [Mg/m ³]	2.09
Dry Density [Mg/m ³]	1.74

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Bulk Density by Linear Measurement Method



1483

BS EN ISO 17892-2:2014, clause 5.1

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.90
Specimen Description	Brown slightly silty CLAY	Sample Type	UT
Specimen Reference		Specimen Depth [m]	5.91
		Sample Reference	22

Test Data	
Date of Test	02/12/2022
Condition of Specimen	Undisturbed
Mass of Specimen [g]	173.99
Water Content [%]	23.1
Bulk Density [Mg/m ³]	2.11
Dry Density [Mg/m ³]	1.71

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

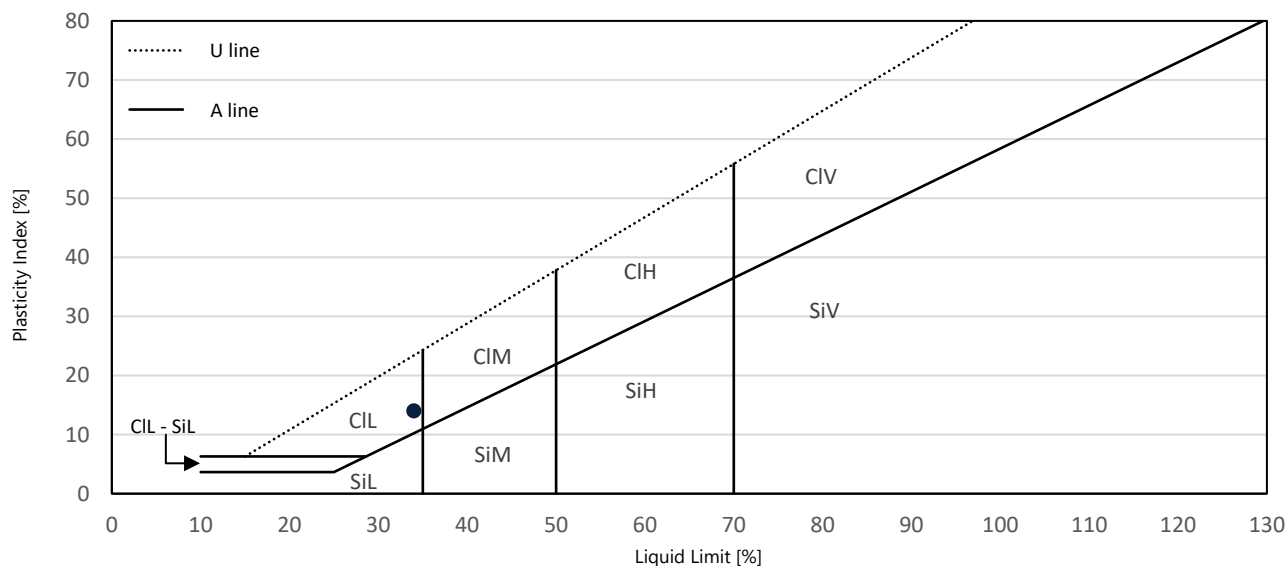
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	31.5
Liquid Limit [%]	34
Plastic Limit [%]	20
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.819
Consistency Index	0.181
Activity Index	
Water Content of Material <425 µm [%]	31.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

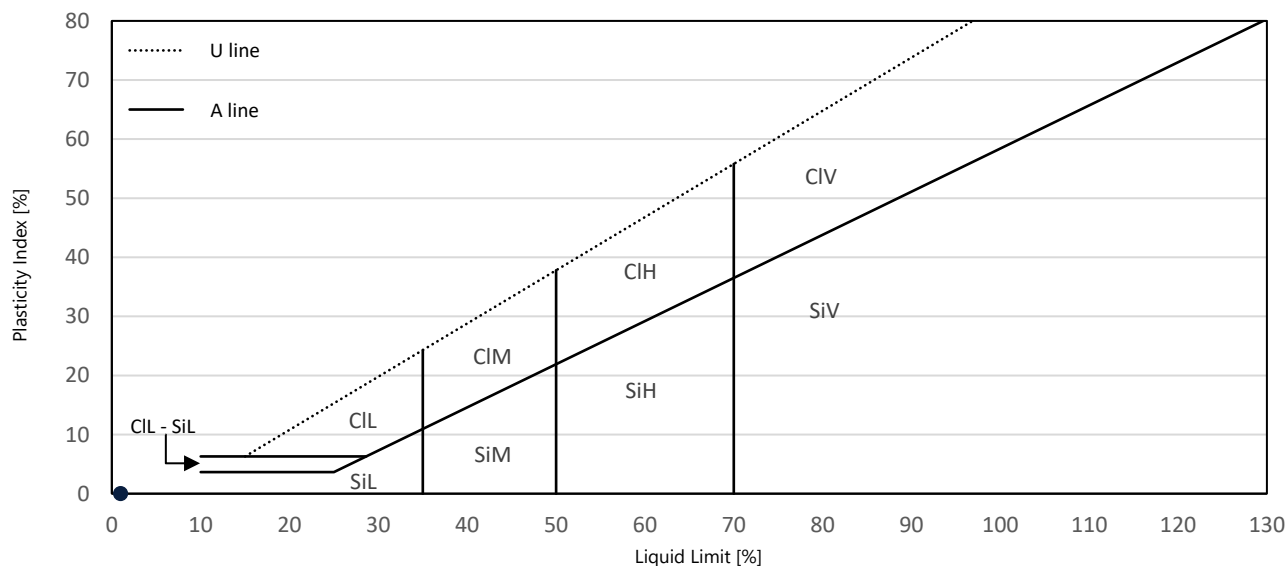
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.4
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

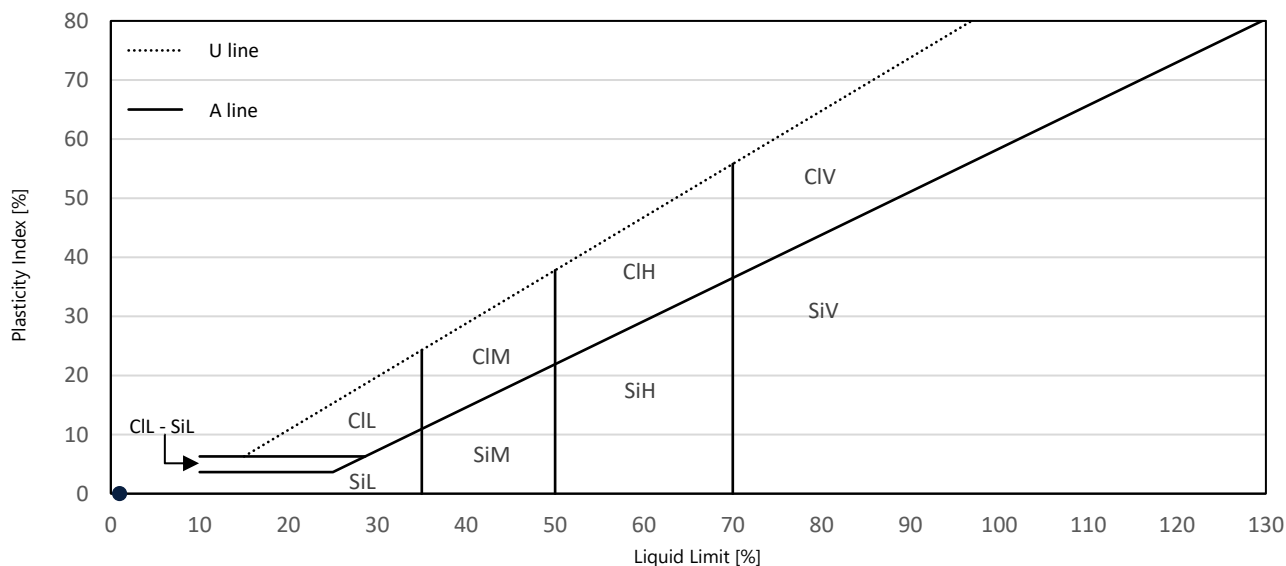
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after washing to remove >425µm
Mandatory Reporting Items	
As Received Water Content [%]	17.8
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	69
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	25.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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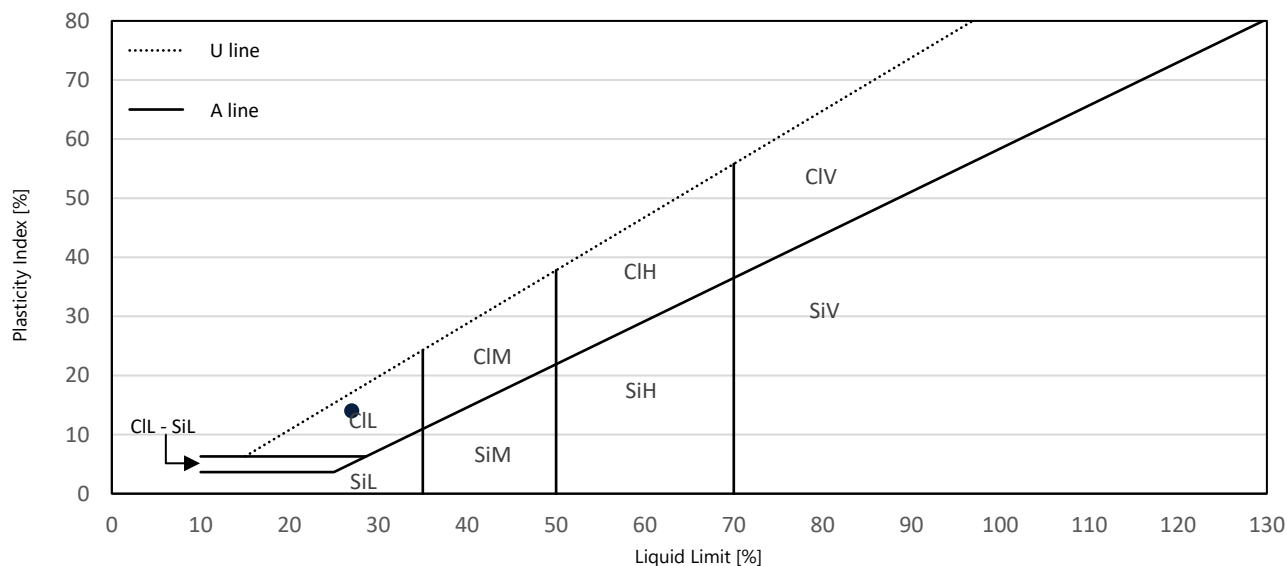
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.50
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	20.2
Liquid Limit [%]	27
Plastic Limit [%]	13
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	93
Optional Reporting Items	
Liquidity Index	0.621
Consistency Index	0.379
Activity Index	
Water Content of Material <425 µm [%]	21.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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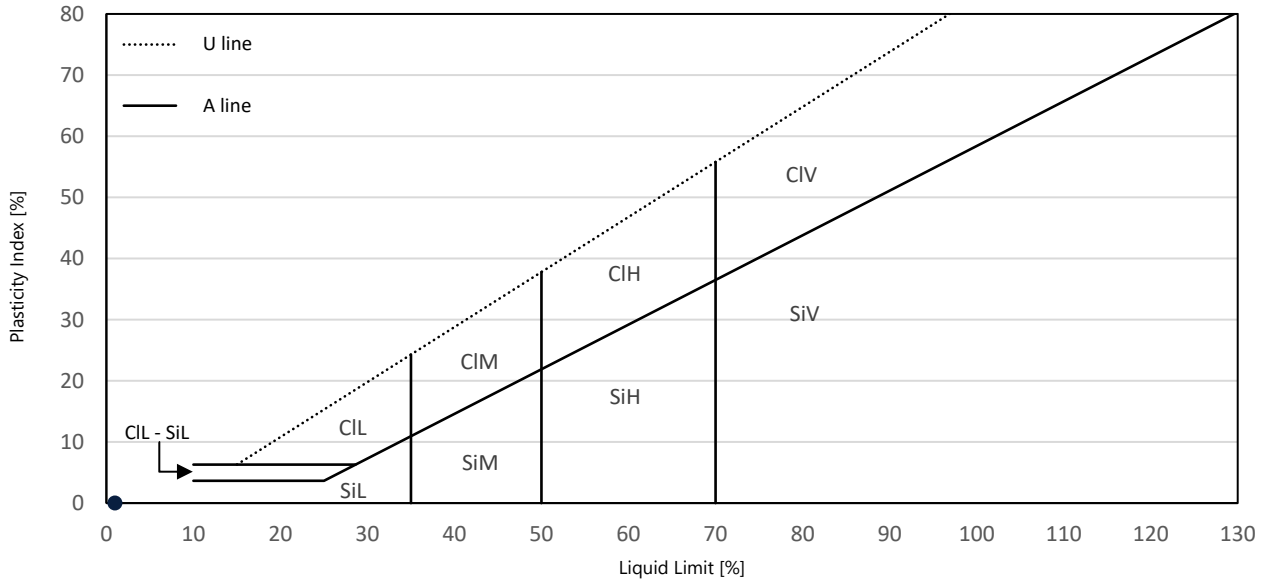
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	27.4
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	27.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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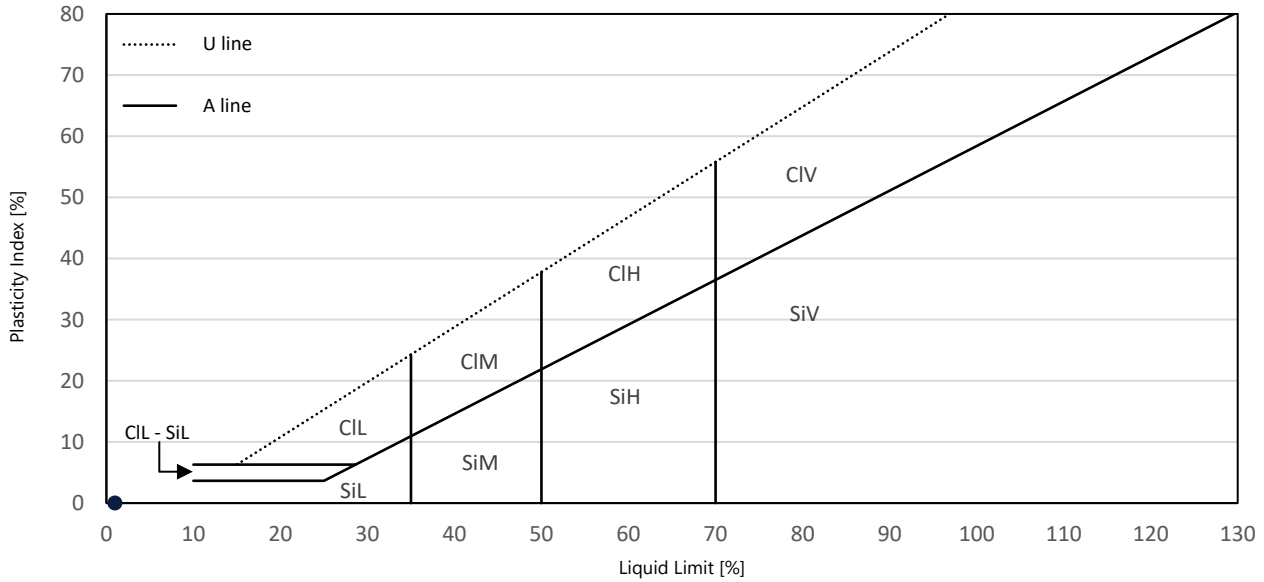
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.8
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

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LABORATORY TEST CERTIFICATE

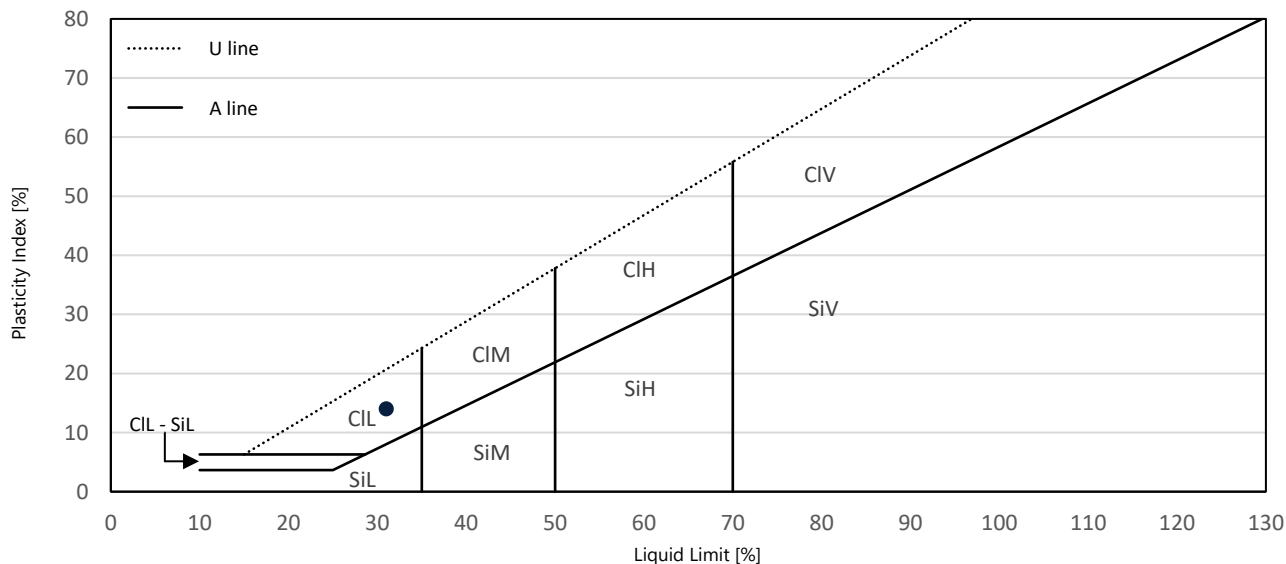
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	20.3
Liquid Limit [%]	31
Plastic Limit [%]	17
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	81
Optional Reporting Items	
Liquidity Index	0.569
Consistency Index	0.431
Activity Index	
Water Content of Material <425 µm [%]	25.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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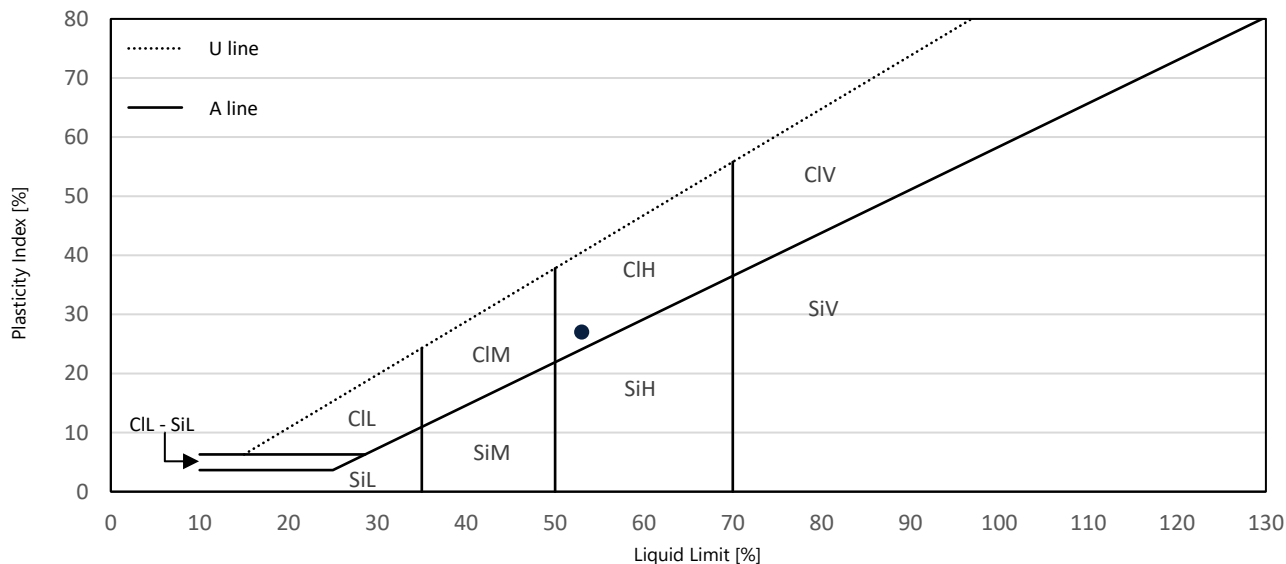
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	35.2
Liquid Limit [%]	53
Plastic Limit [%]	26
Plasticity Index [%]	27
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.341
Consistency Index	0.659
Activity Index	
Water Content of Material <425 µm [%]	35.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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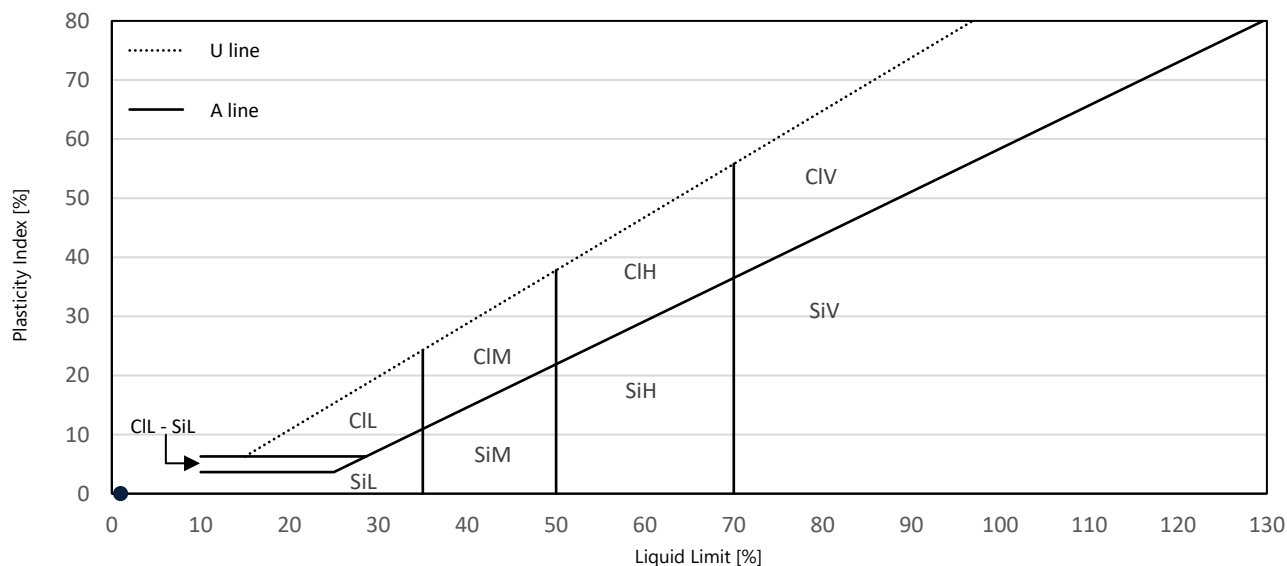
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	24.1
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	24.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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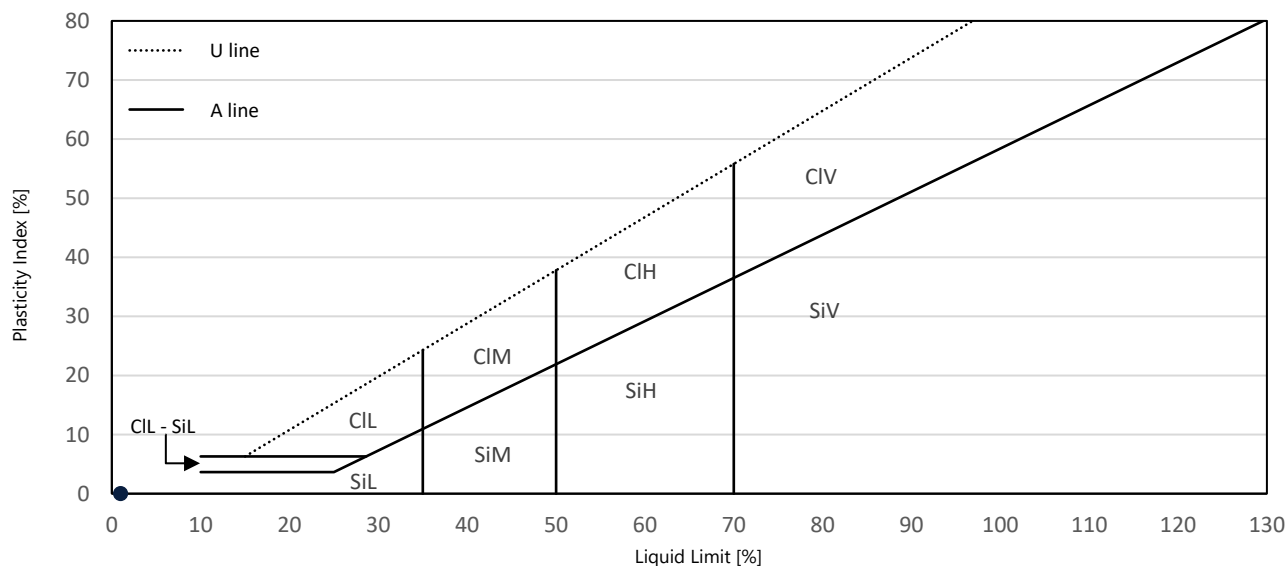
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	24.6
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	24.6

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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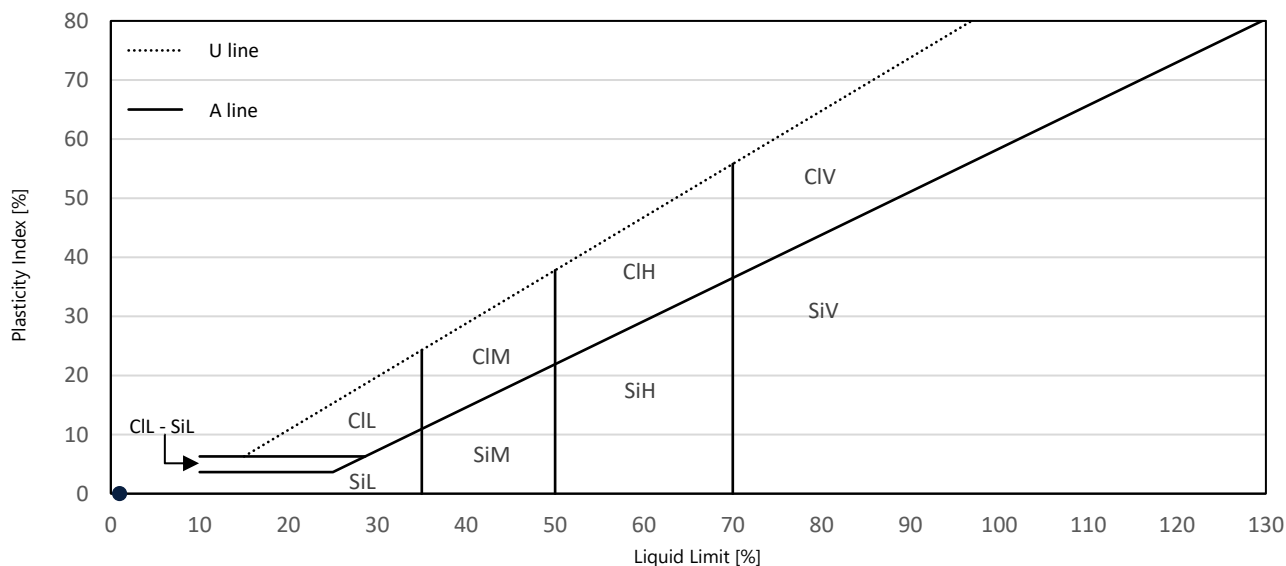
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.2
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	22.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
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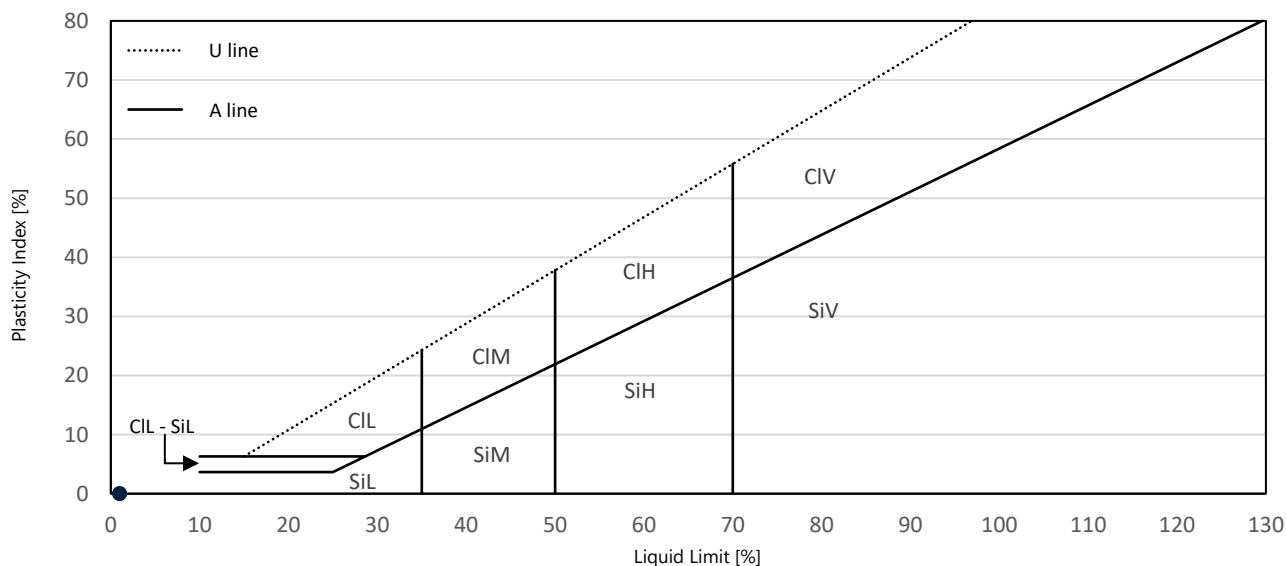
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	21.5
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	21.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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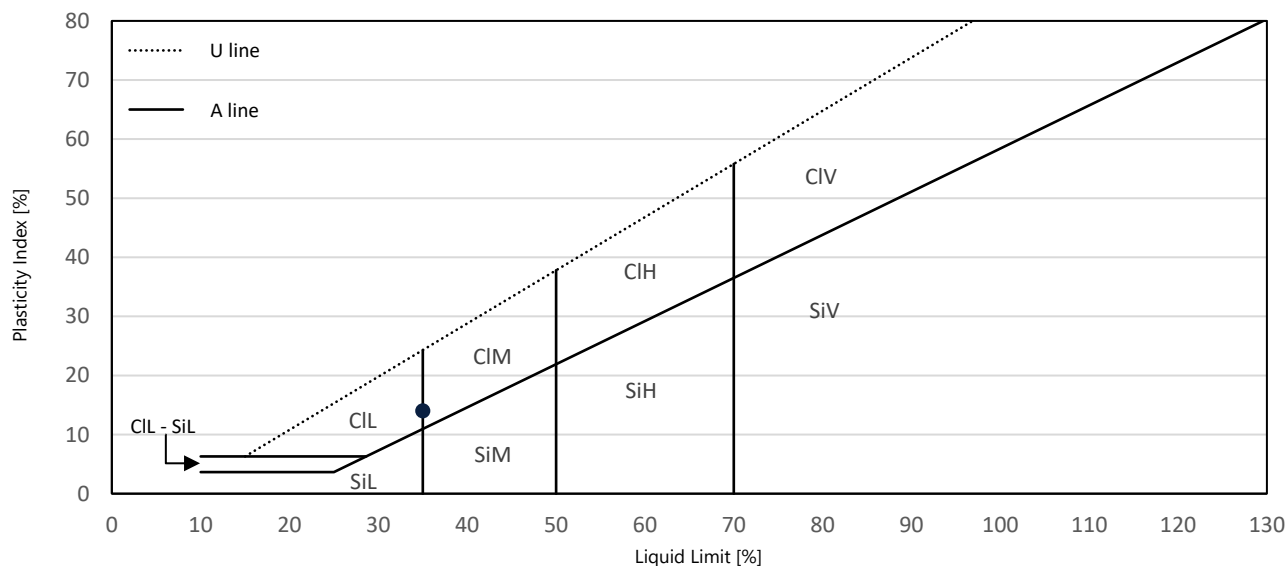
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	42



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	27.8
Liquid Limit [%]	35
Plastic Limit [%]	21
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	67
Optional Reporting Items	
Liquidity Index	1.457
Consistency Index	-0.457
Activity Index	
Water Content of Material <425 µm [%]	41.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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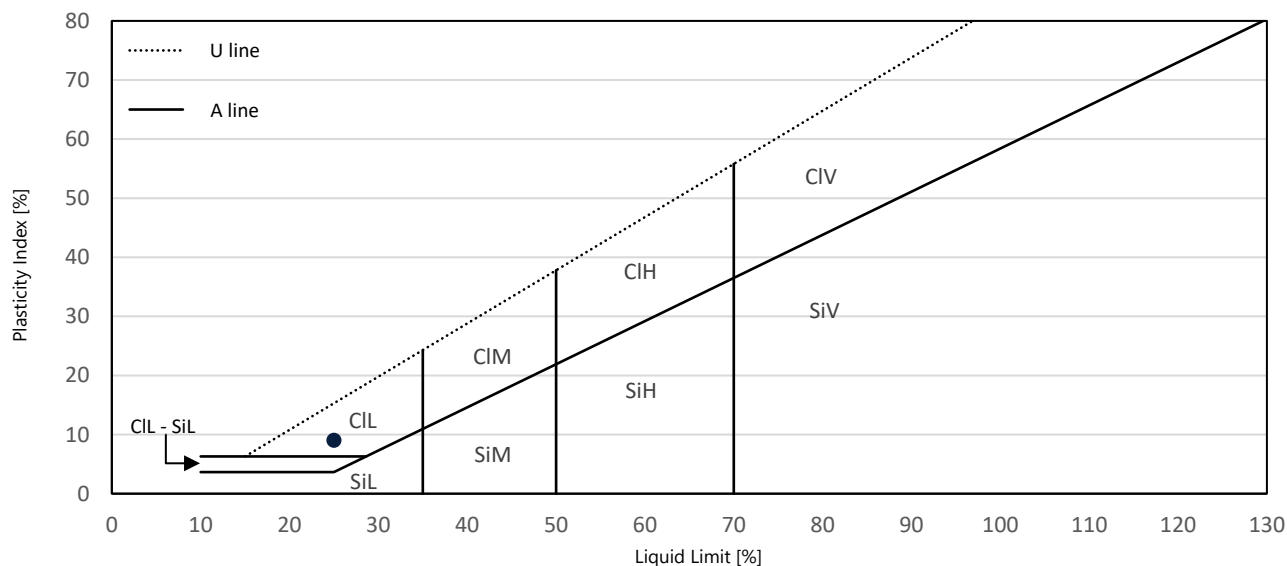
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.50
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	30.4
Liquid Limit [%]	25
Plastic Limit [%]	16
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.600
Consistency Index	-0.600
Activity Index	
Water Content of Material <425 µm [%]	30.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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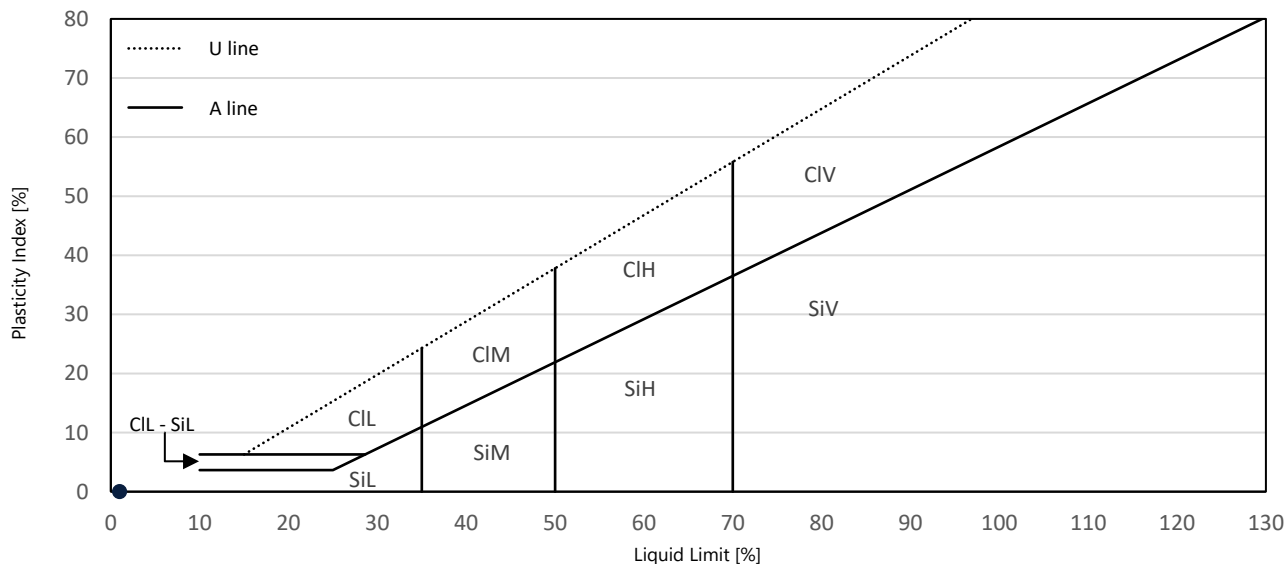
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.1
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

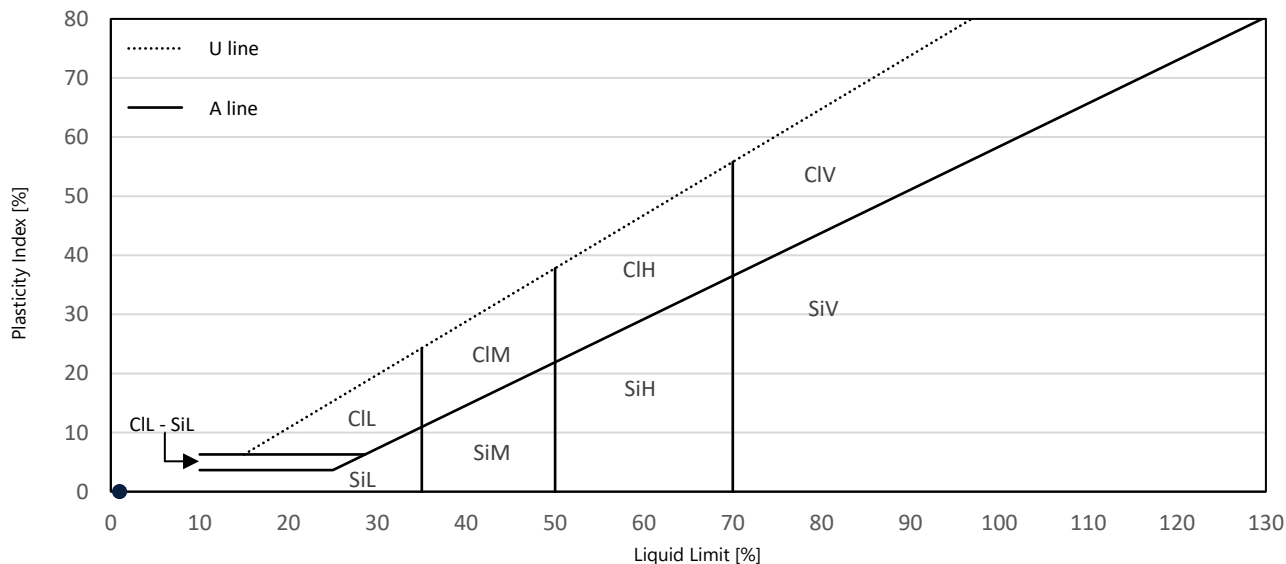
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	28



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	16.4
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	16.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

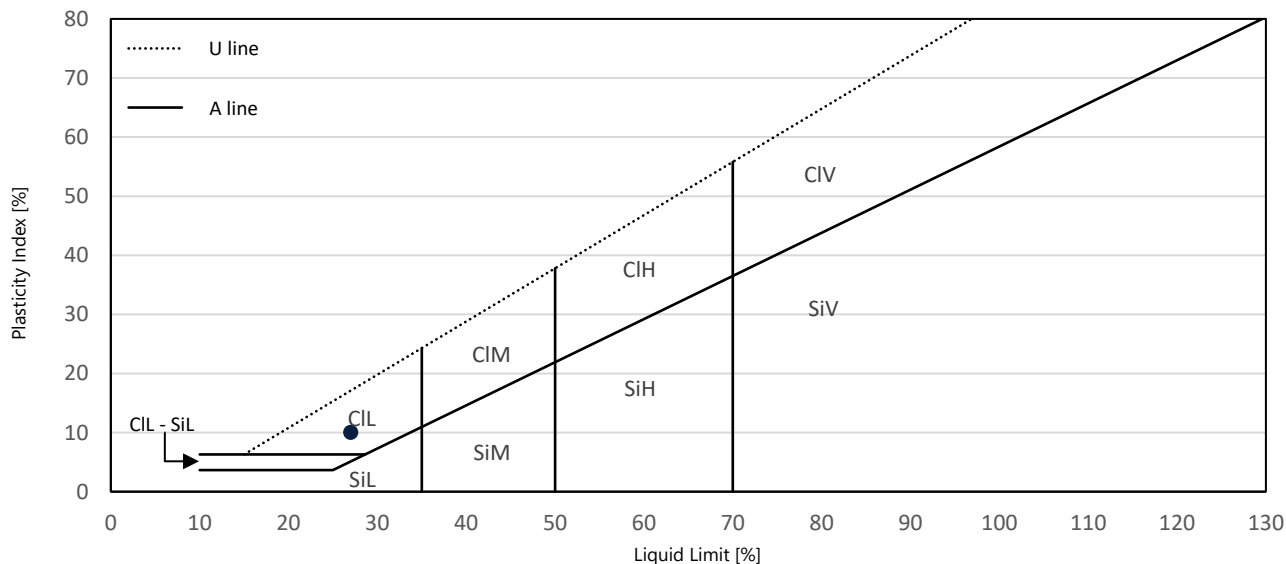
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	43.7
Liquid Limit [%]	27
Plastic Limit [%]	17
Plasticity Index [%]	10
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	2.669
Consistency Index	-1.669
Activity Index	
Water Content of Material <425 µm [%]	43.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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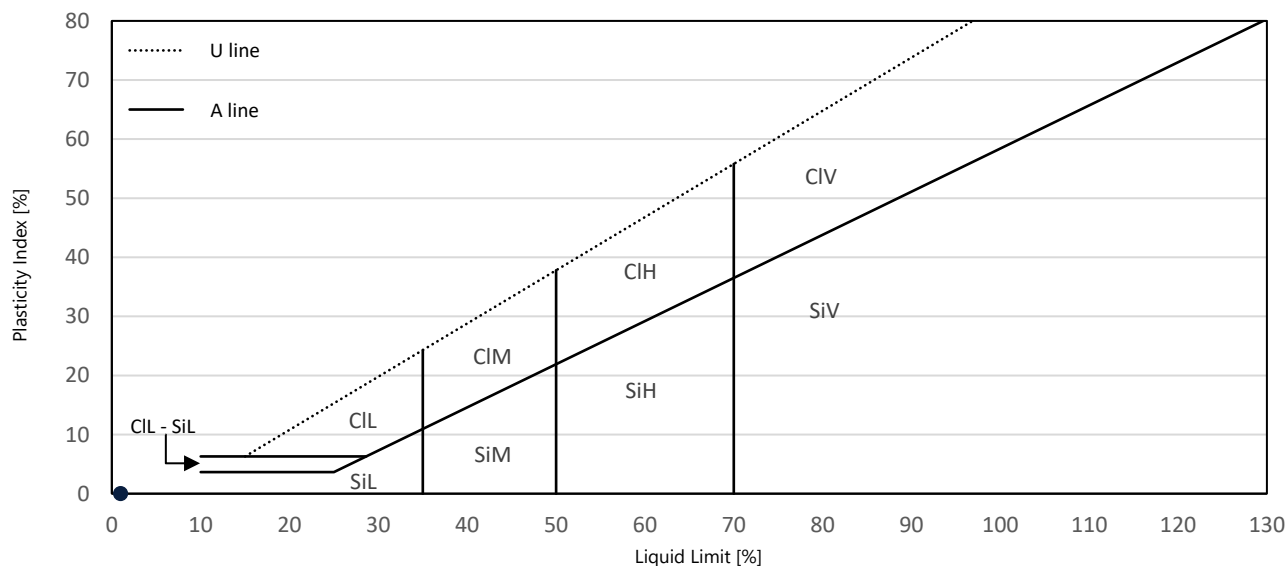
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.7
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	22.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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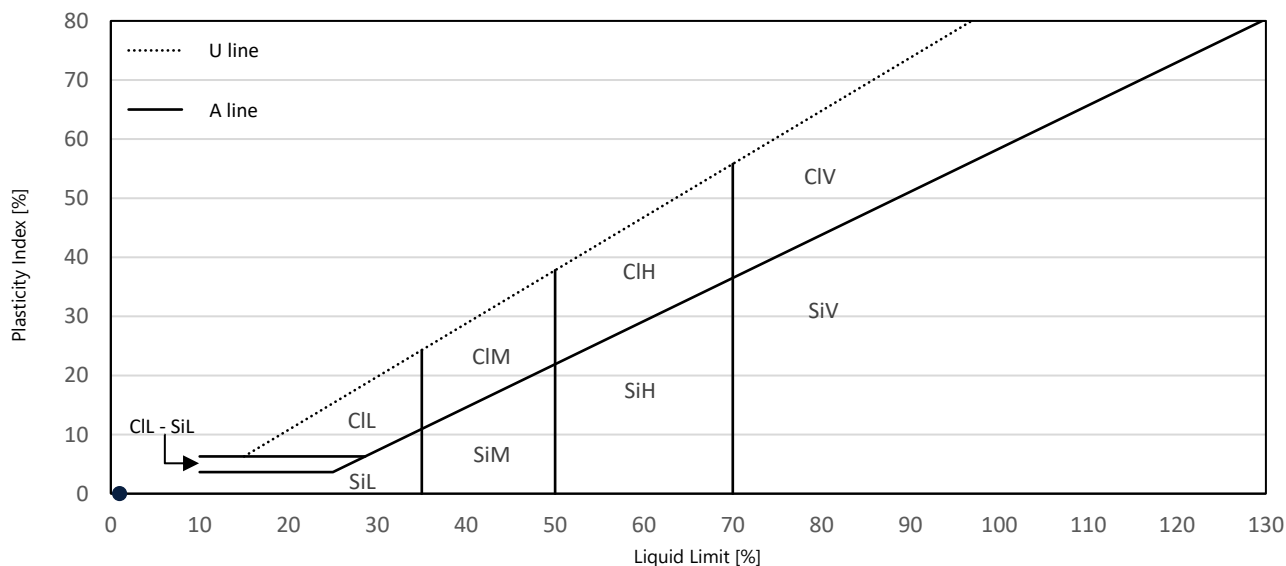
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	27.3
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	27.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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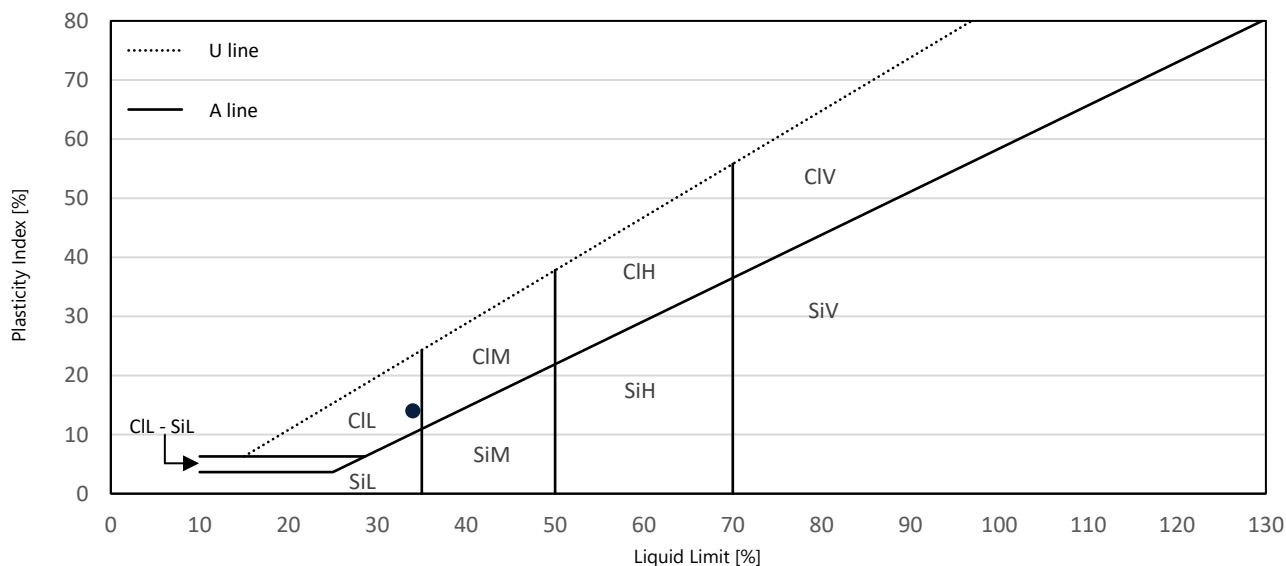
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	19.4
Liquid Limit [%]	34
Plastic Limit [%]	20
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	87
Optional Reporting Items	
Liquidity Index	0.168
Consistency Index	0.832
Activity Index	
Water Content of Material <425 µm [%]	22.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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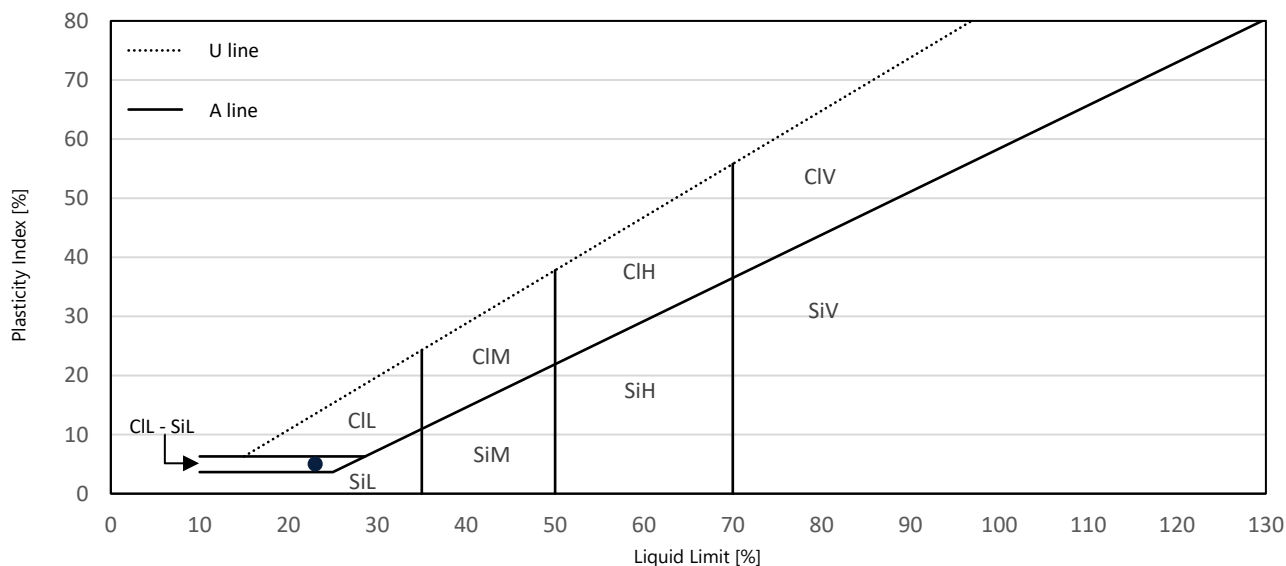
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown sandy clayey SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.2
Liquid Limit [%]	23
Plastic Limit [%]	18
Plasticity Index [%]	5
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.042
Consistency Index	-0.042
Activity Index	
Water Content of Material <425 µm [%]	23.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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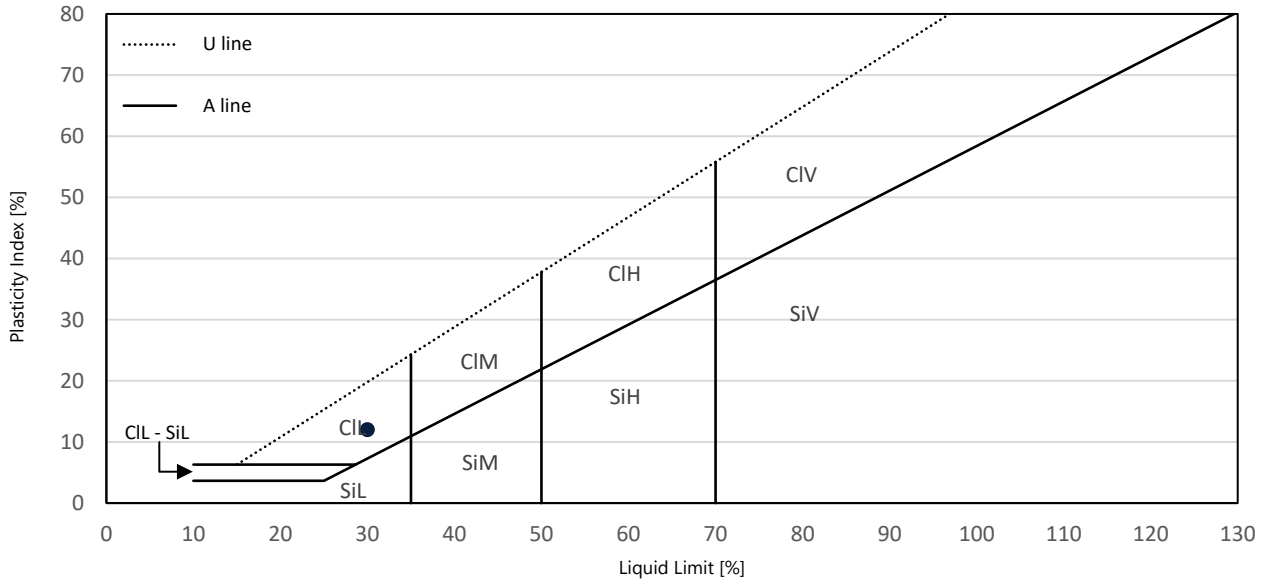
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly sandy gravelly CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	42



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	23.9
Liquid Limit [%]	30
Plastic Limit [%]	18
Plasticity Index [%]	12
% Passing 425 µm BS Sieve [%]	67
Optional Reporting Items	
Liquidity Index	1.449
Consistency Index	-0.449
Activity Index	
Water Content of Material <425 µm [%]	35.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

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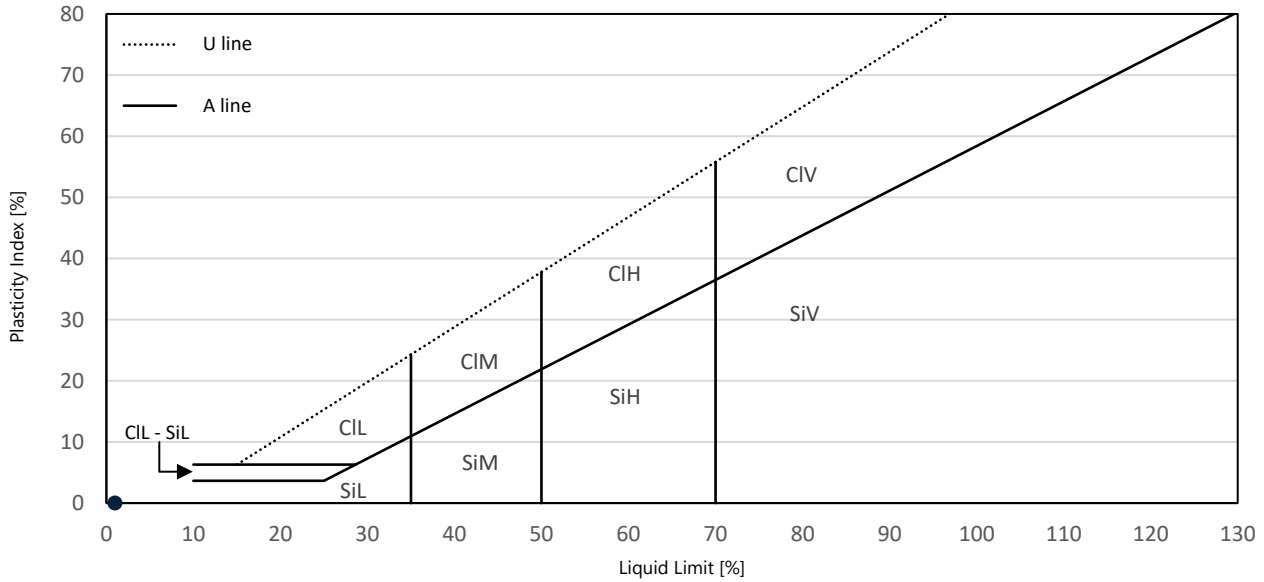
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	21.2
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	21.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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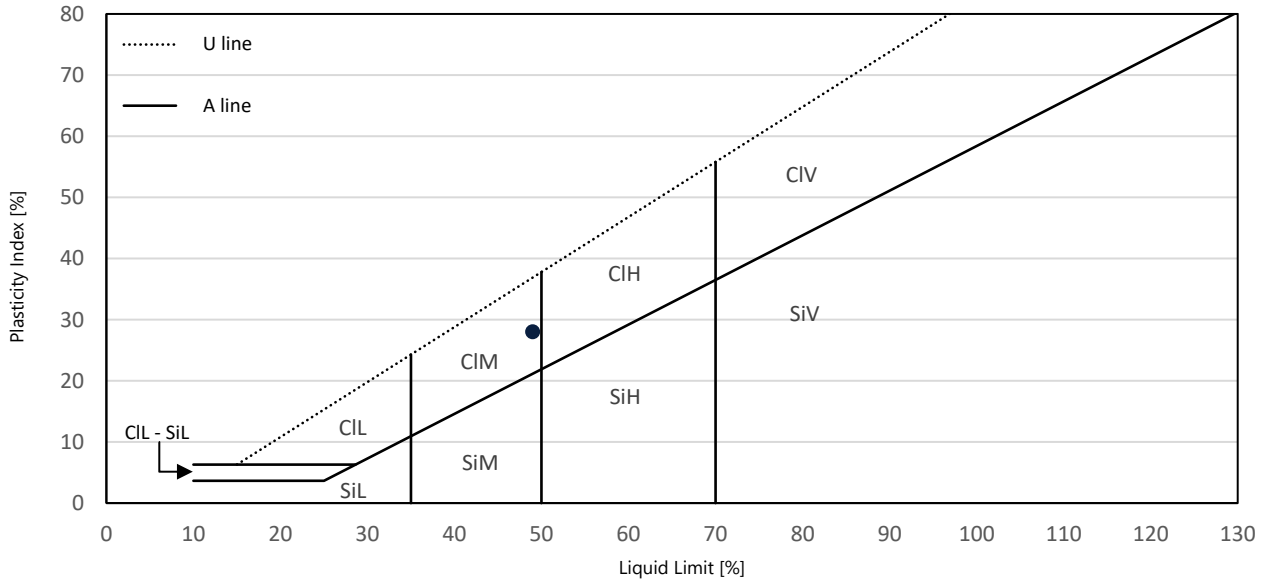
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	29.7
Liquid Limit [%]	49
Plastic Limit [%]	21
Plasticity Index [%]	28
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.311
Consistency Index	0.689
Activity Index	
Water Content of Material <425 µm [%]	29.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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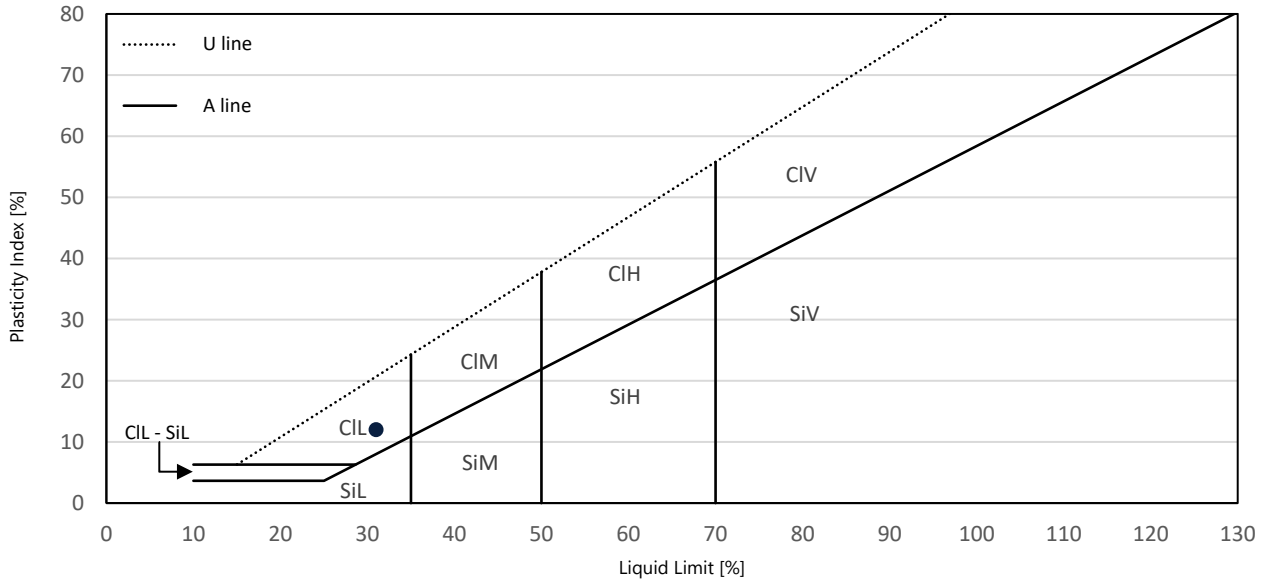
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	18.9
Liquid Limit [%]	31
Plastic Limit [%]	19
Plasticity Index [%]	12
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	-0.008
Consistency Index	1.008
Activity Index	
Water Content of Material <425 µm [%]	18.9

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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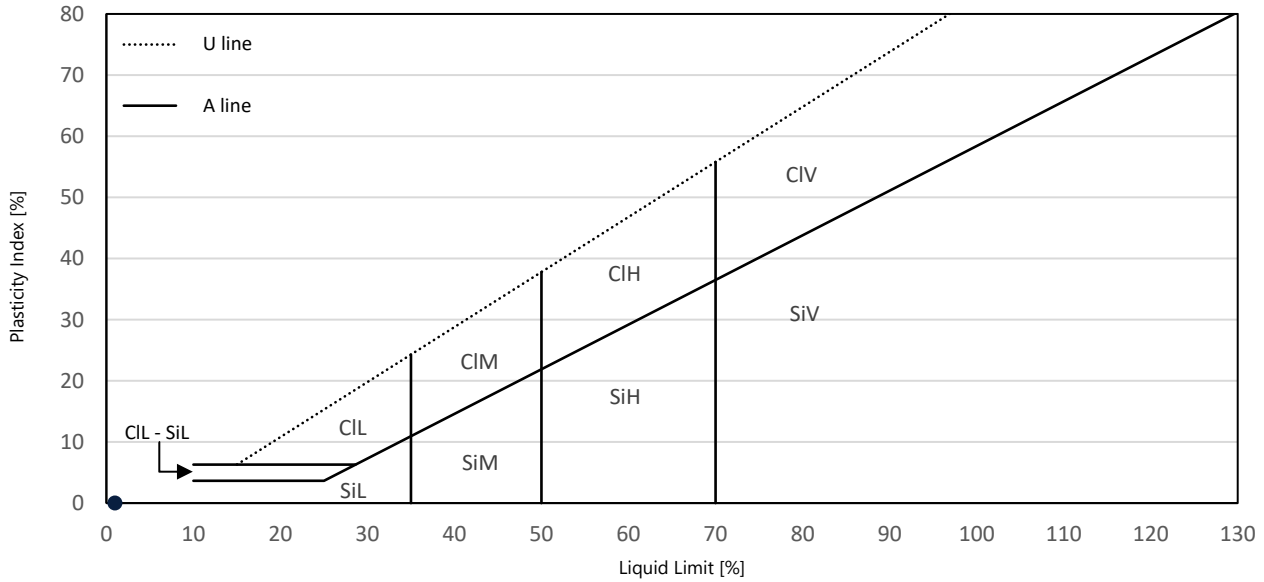
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.20
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	27.8
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	27.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
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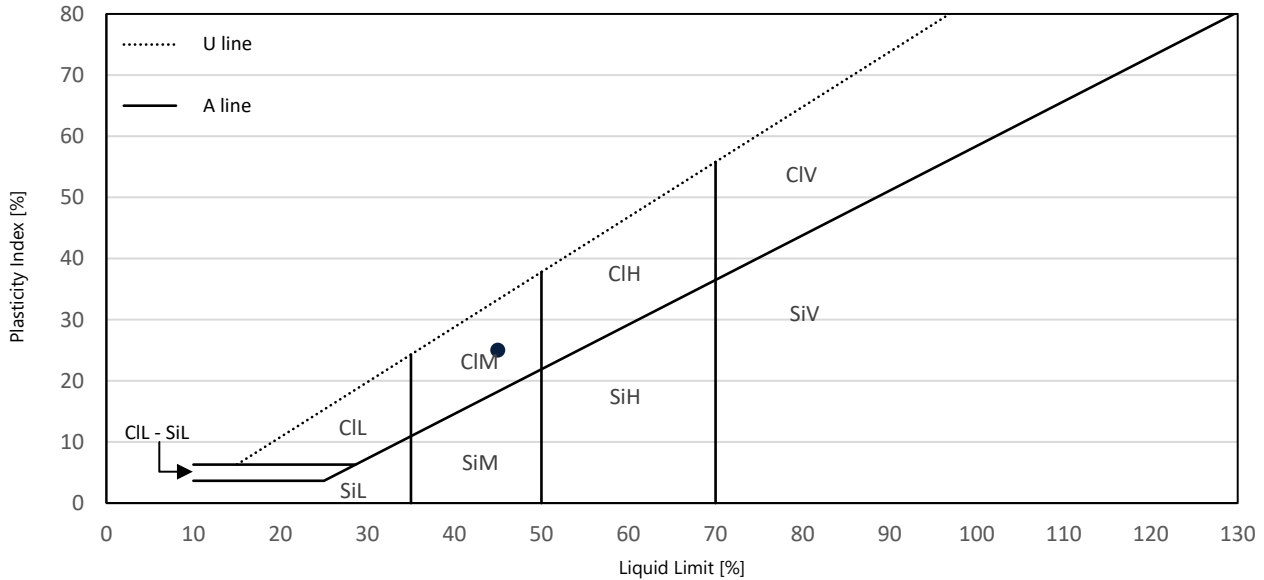
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	35.2
Liquid Limit [%]	45
Plastic Limit [%]	20
Plasticity Index [%]	25
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.606
Consistency Index	0.394
Activity Index	
Water Content of Material <425 µm [%]	35.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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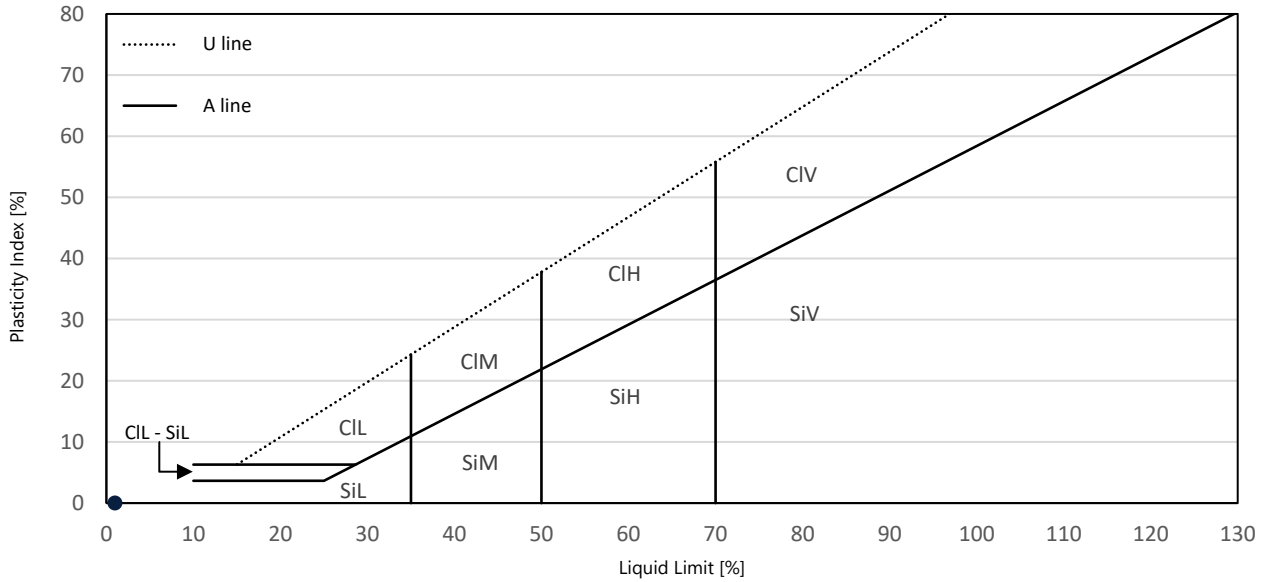
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.20
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.3
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	22.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

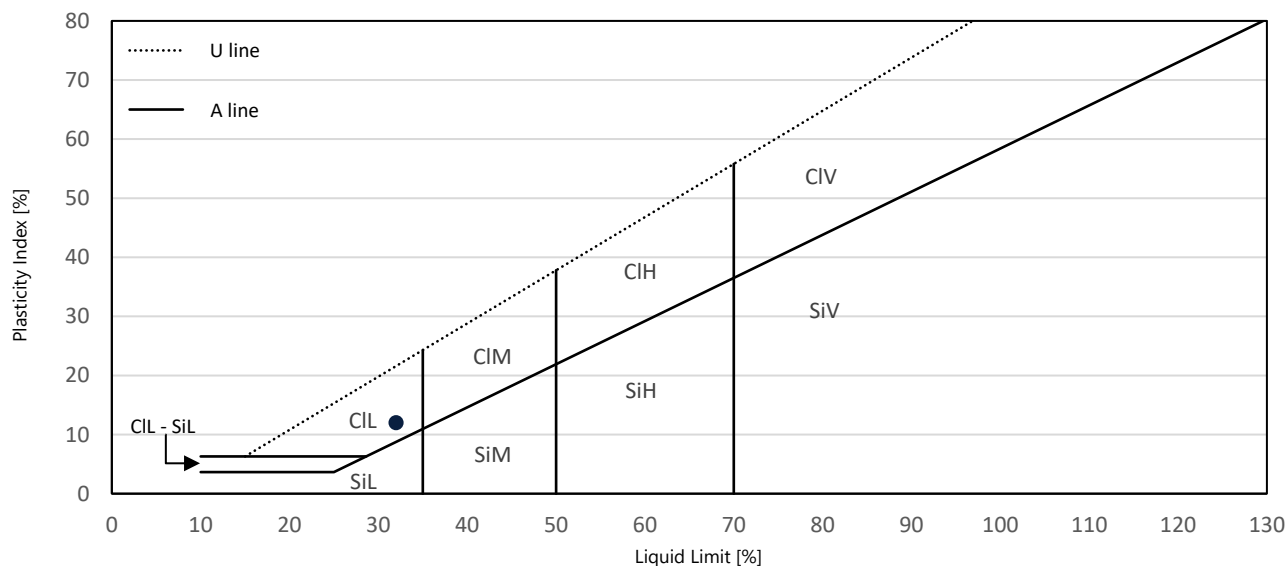
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.30
Specimen Description	Brown slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	24.8
Liquid Limit [%]	32
Plastic Limit [%]	20
Plasticity Index [%]	12
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.402
Consistency Index	0.598
Activity Index	
Water Content of Material <425 µm [%]	24.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

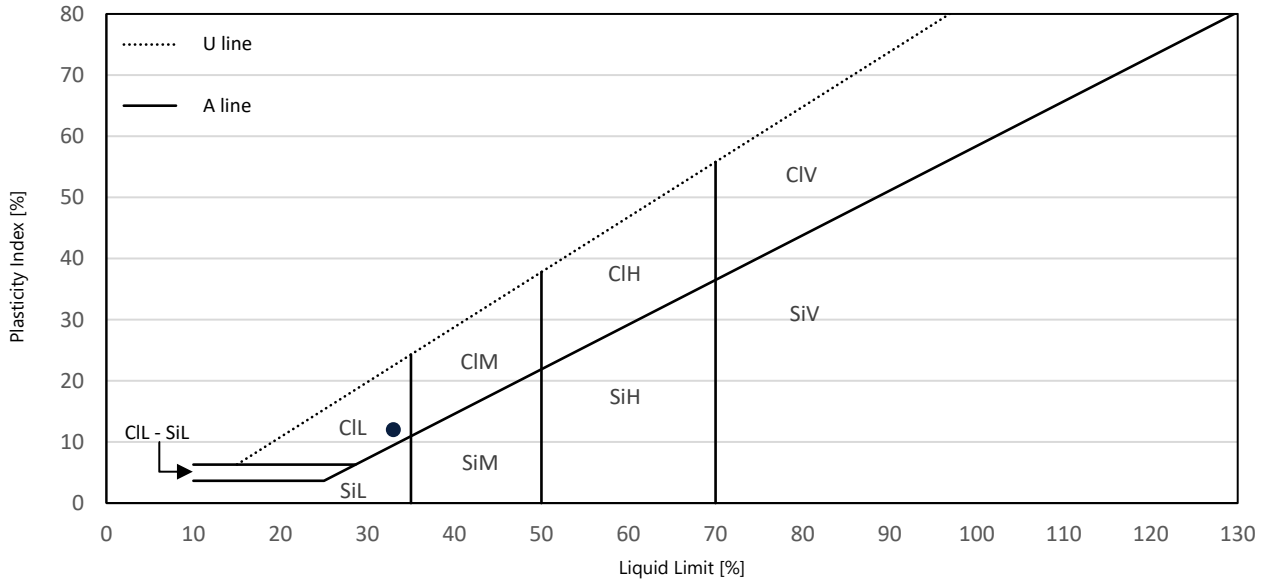
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Grey brown slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	21.5
Liquid Limit [%]	33
Plastic Limit [%]	21
Plasticity Index [%]	12
% Passing 425 µm BS Sieve [%]	71
Optional Reporting Items	
Liquidity Index	0.774
Consistency Index	0.226
Activity Index	
Water Content of Material <425 µm [%]	30.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

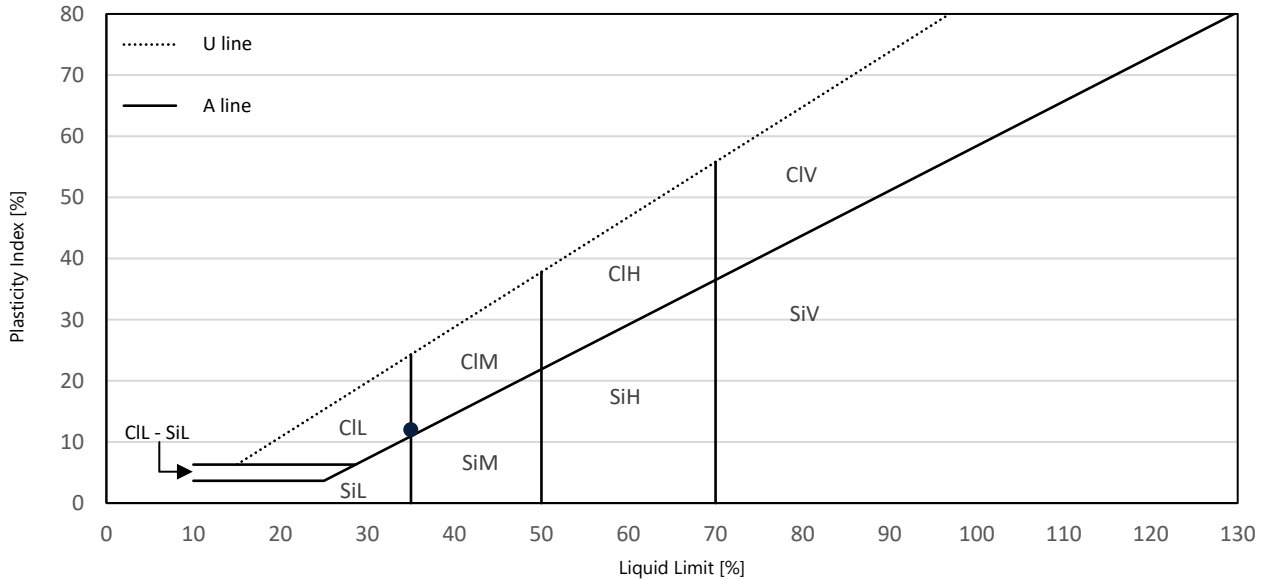
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.60
Specimen Description	Brown slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	40



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	16.6
Liquid Limit [%]	35
Plastic Limit [%]	23
Plasticity Index [%]	12
% Passing 425 µm BS Sieve [%]	98
Optional Reporting Items	
Liquidity Index	-0.514
Consistency Index	1.514
Activity Index	
Water Content of Material <425 µm [%]	16.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Four point liquid limit test.				

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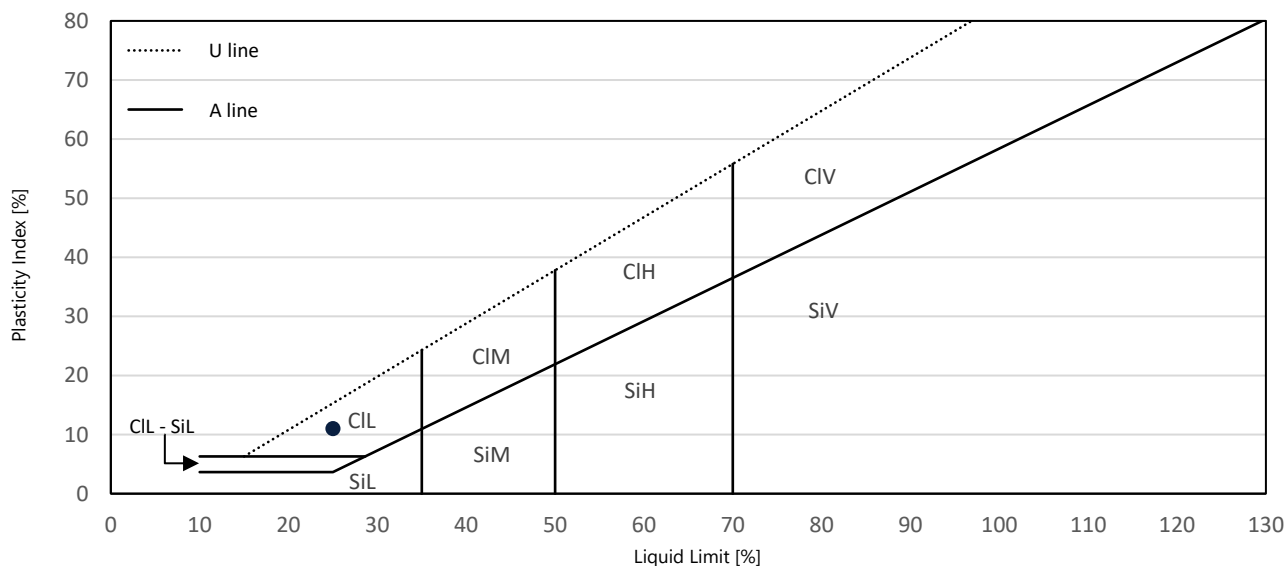
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.20
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	28.4
Liquid Limit [%]	25
Plastic Limit [%]	14
Plasticity Index [%]	11
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.311
Consistency Index	-0.311
Activity Index	
Water Content of Material <425 µm [%]	28.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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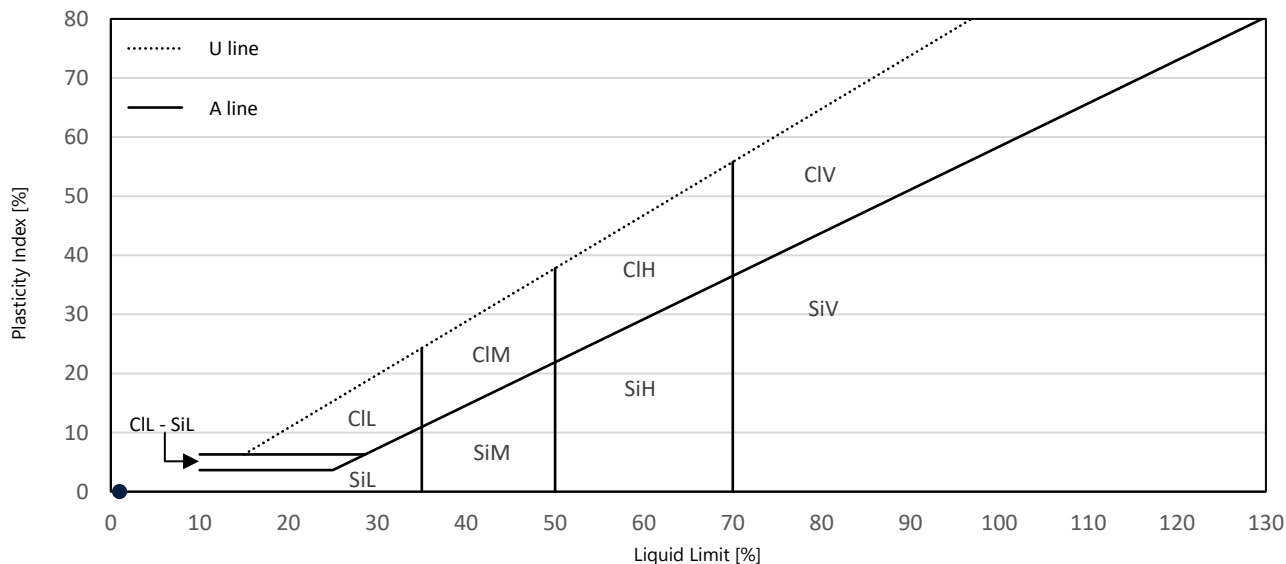
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.20
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	20.2
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	20.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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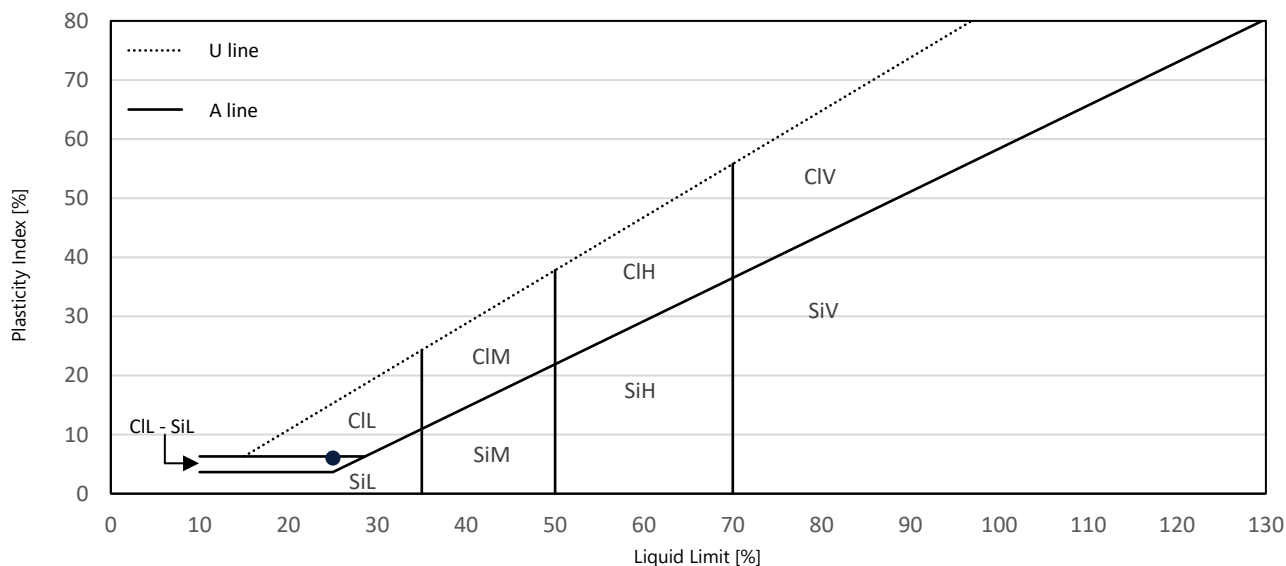
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	31.7
Liquid Limit [%]	25
Plastic Limit [%]	19
Plasticity Index [%]	6
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	2.123
Consistency Index	-1.123
Activity Index	
Water Content of Material <425 µm [%]	31.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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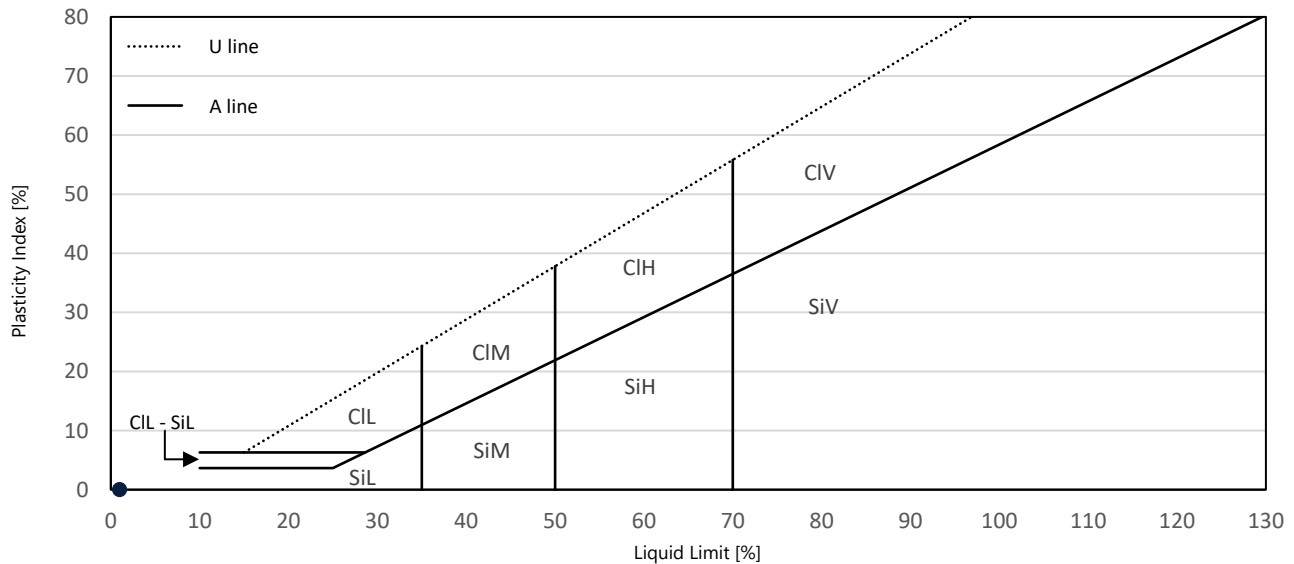
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.80
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	20.5
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	20.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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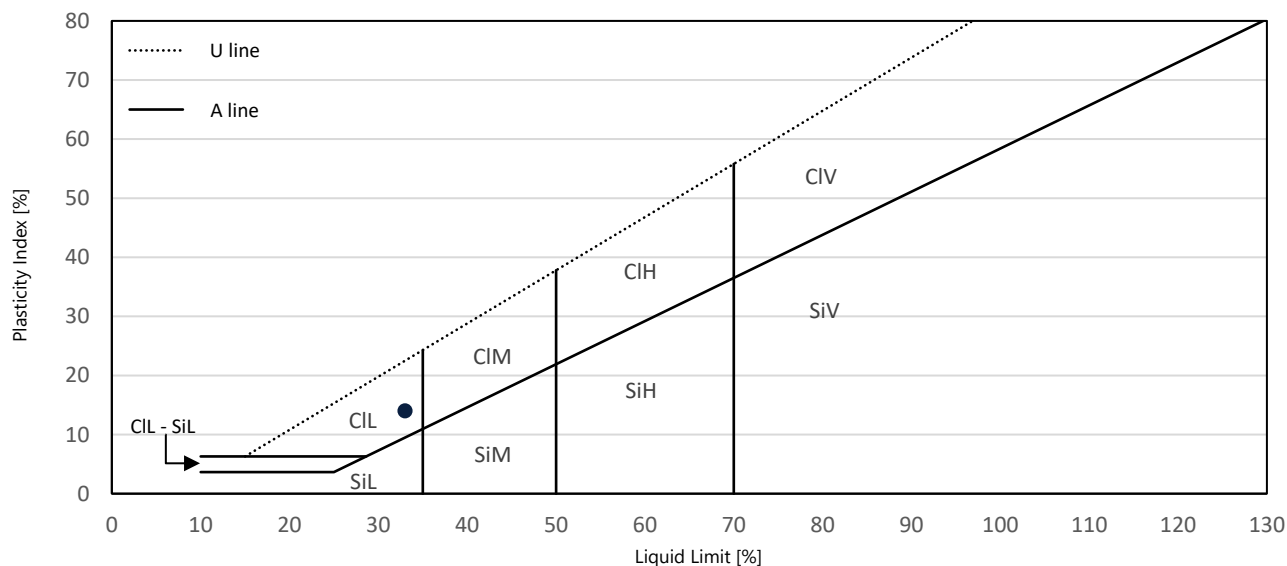
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	24.5
Liquid Limit [%]	33
Plastic Limit [%]	19
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.390
Consistency Index	0.610
Activity Index	
Water Content of Material <425 µm [%]	24.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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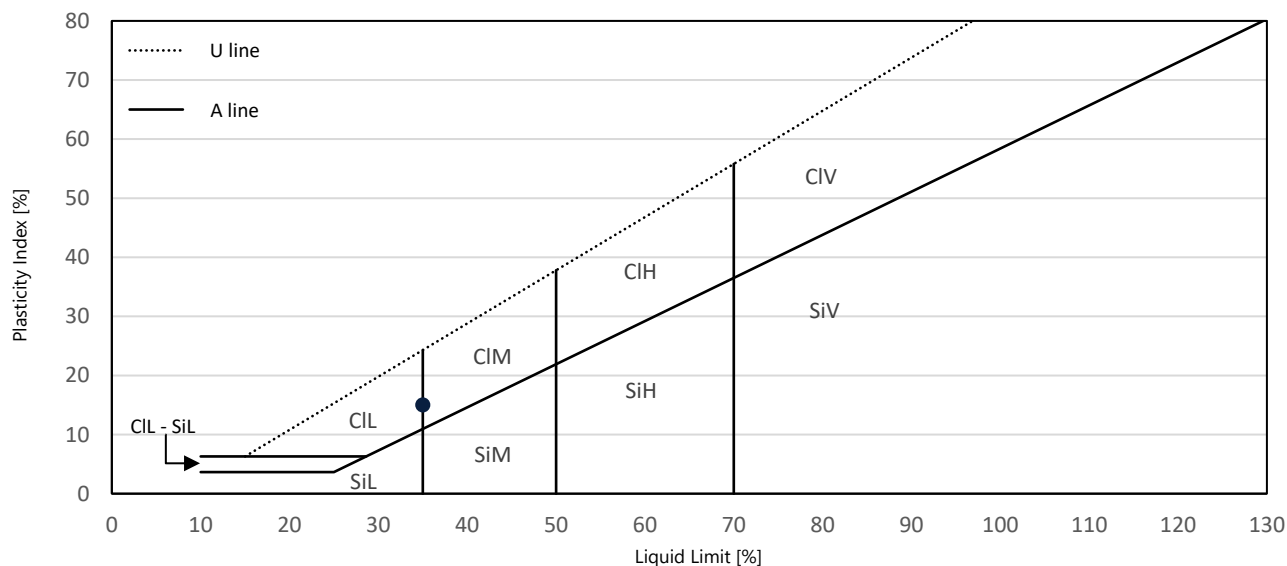
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.50
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	45



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	21.8
Liquid Limit [%]	35
Plastic Limit [%]	20
Plasticity Index [%]	15
% Passing 425 µm BS Sieve [%]	89
Optional Reporting Items	
Liquidity Index	0.295
Consistency Index	0.705
Activity Index	
Water Content of Material <425 µm [%]	24.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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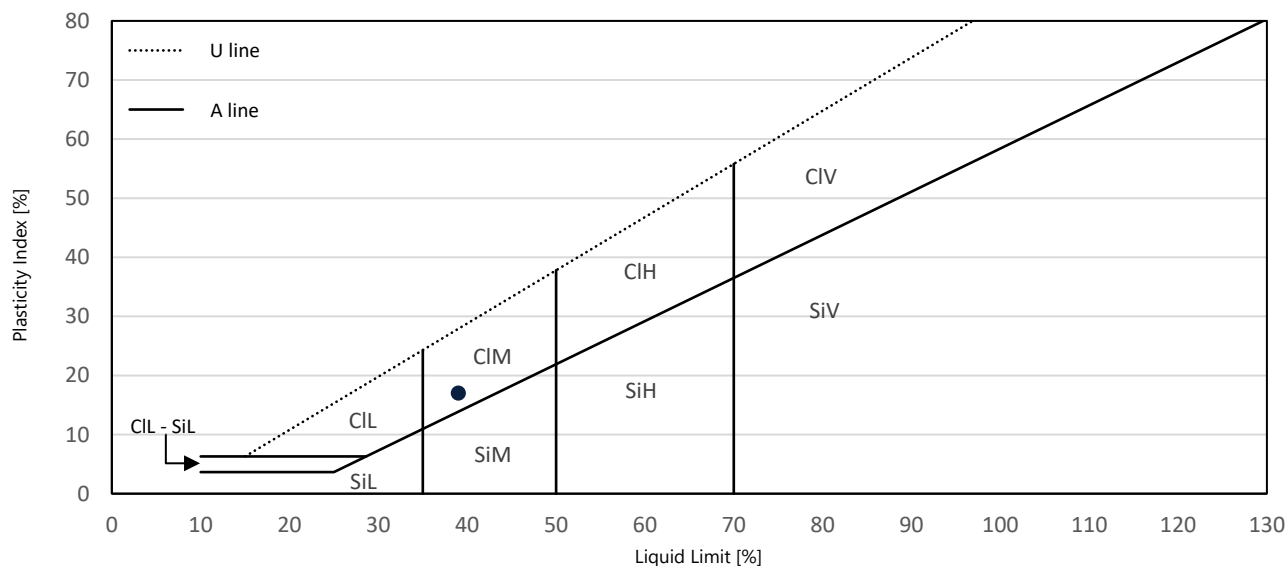
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	30.4
Liquid Limit [%]	39
Plastic Limit [%]	22
Plasticity Index [%]	17
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.492
Consistency Index	0.508
Activity Index	
Water Content of Material <425 µm [%]	30.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
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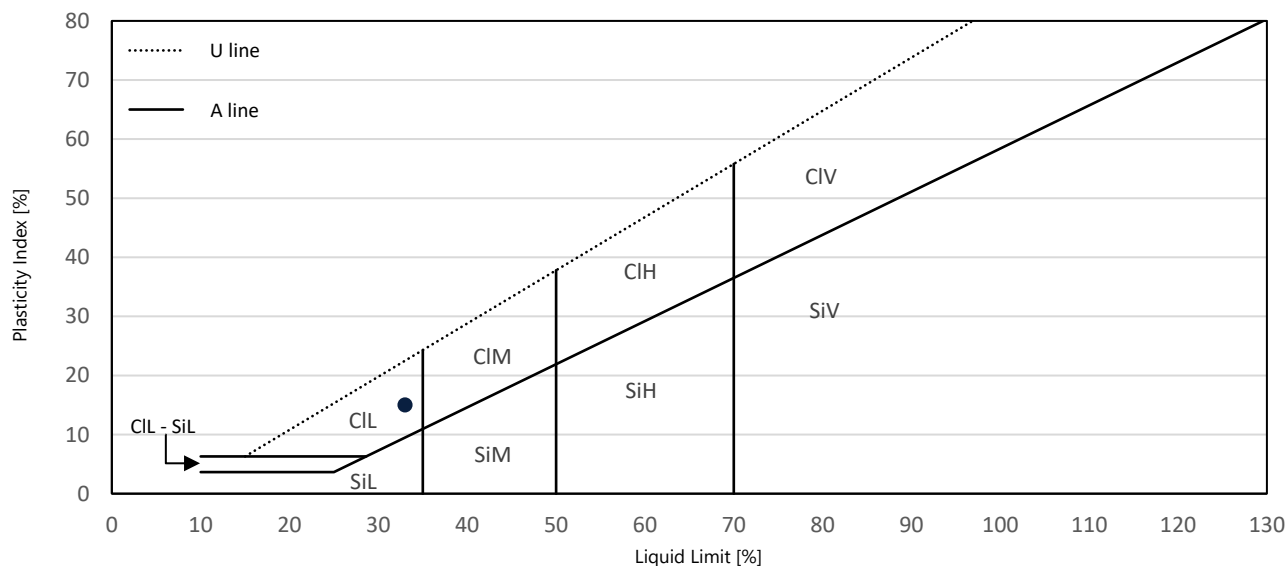
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.50
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	36.5
Liquid Limit [%]	33
Plastic Limit [%]	18
Plasticity Index [%]	15
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.235
Consistency Index	-0.235
Activity Index	
Water Content of Material <425 µm [%]	36.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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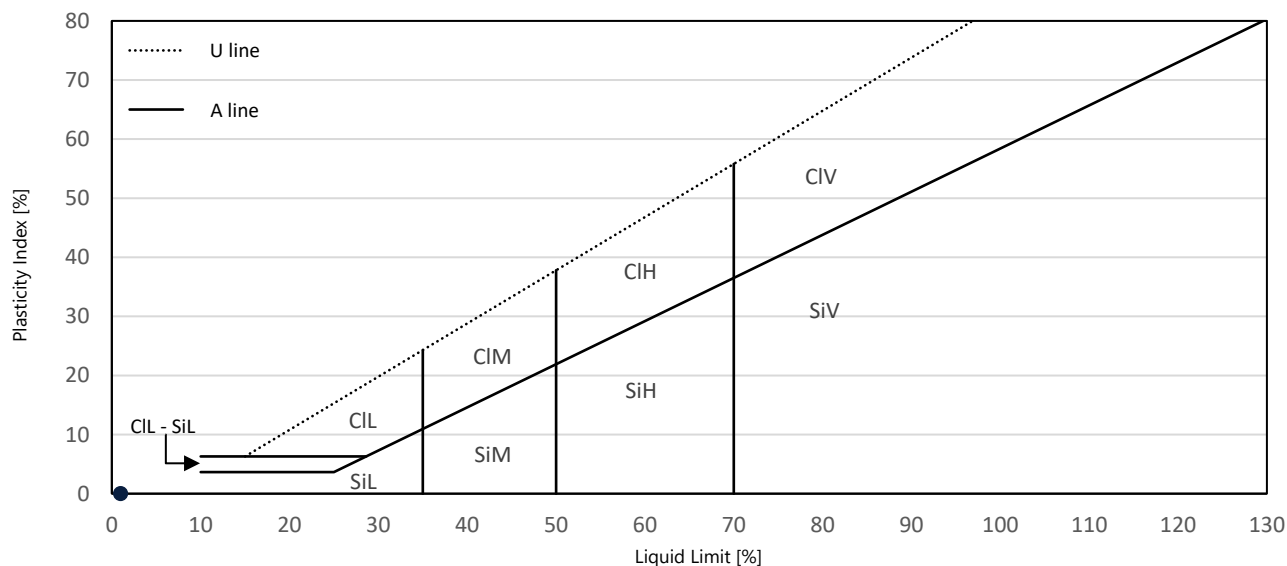
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown silty sandy GRAVEL	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	39



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after washing to remove >425µm
Mandatory Reporting Items	
As Received Water Content [%]	19.6
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	23
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	85.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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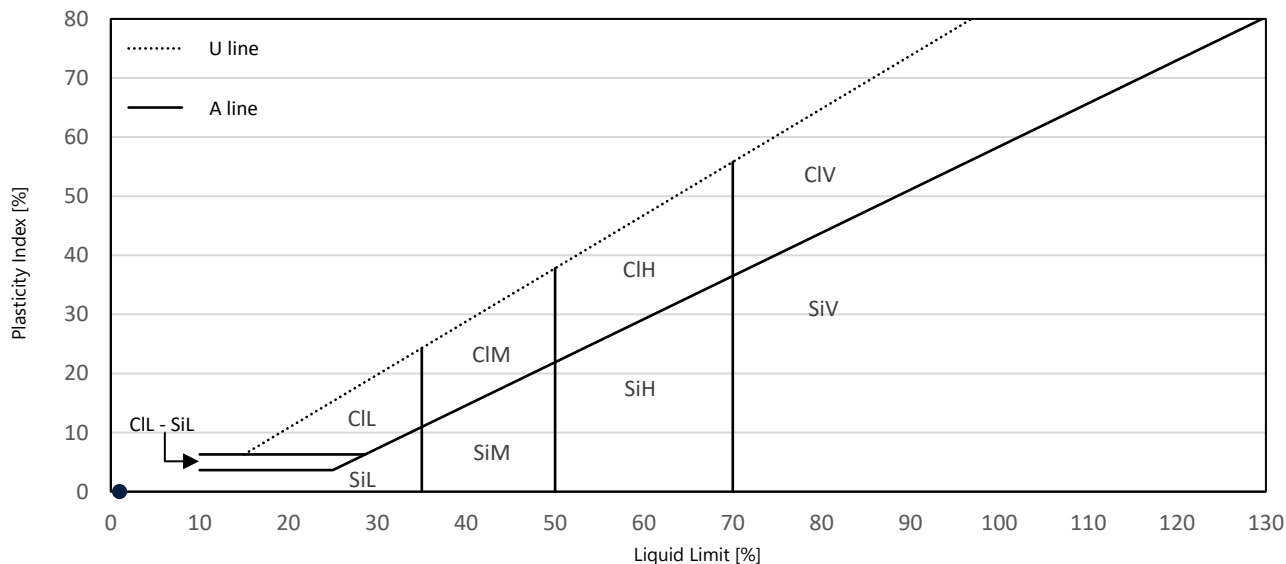
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.70
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	19.0
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	19.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

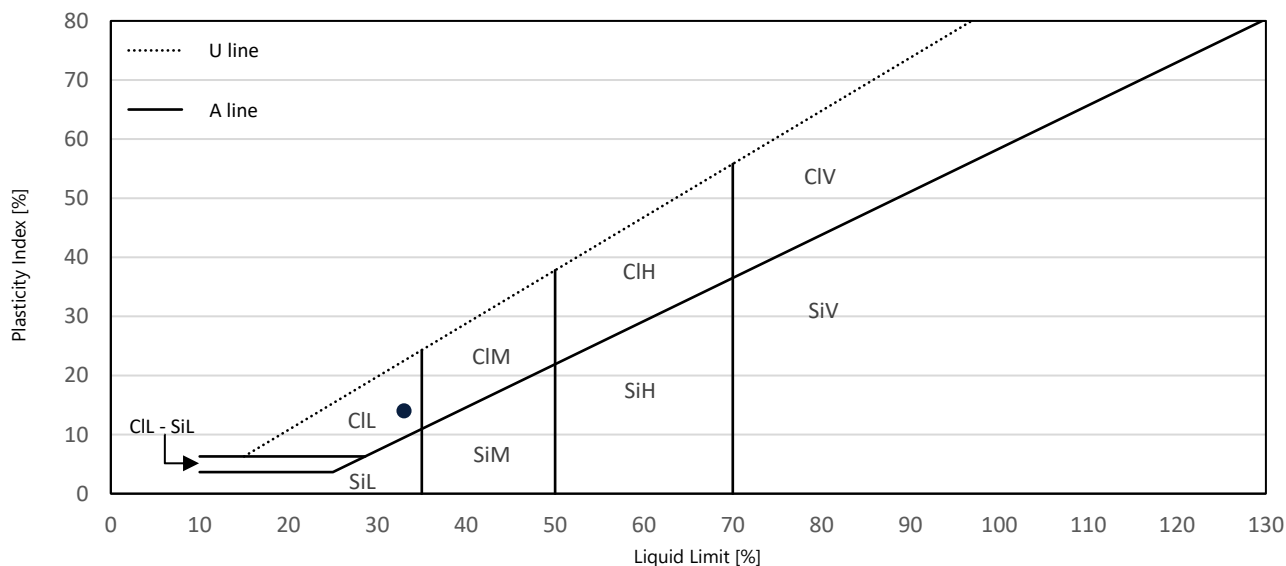
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.20
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	19.6
Liquid Limit [%]	33
Plastic Limit [%]	19
Plasticity Index [%]	14
% Passing 425 µm BS Sieve [%]	92
Optional Reporting Items	
Liquidity Index	0.170
Consistency Index	0.830
Activity Index	
Water Content of Material <425 µm [%]	21.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

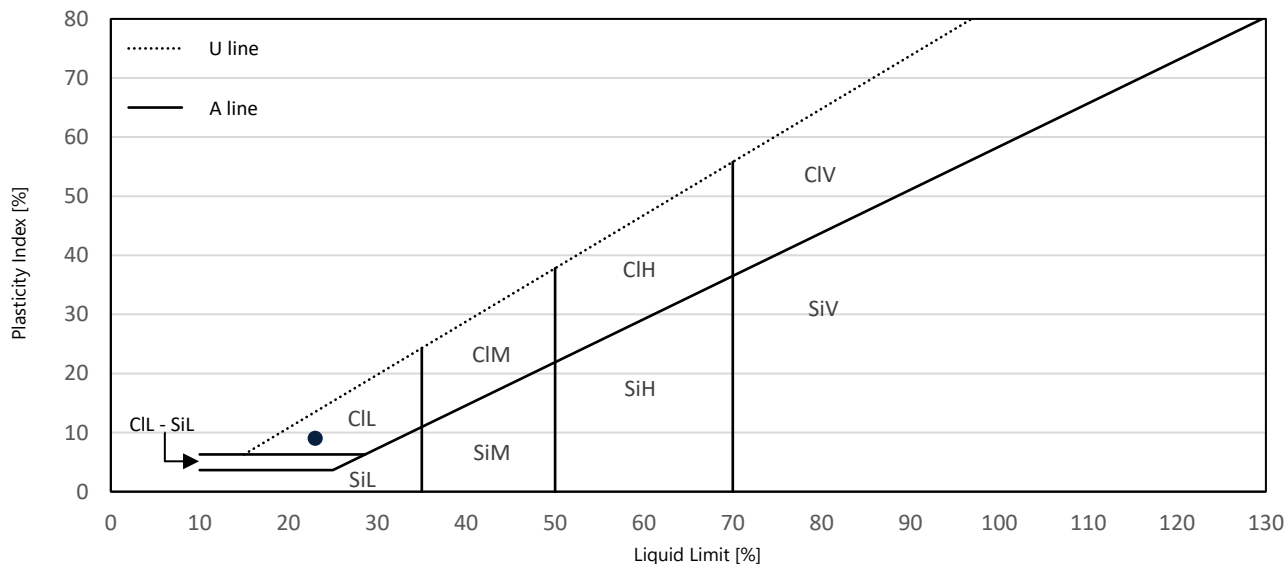
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.50
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	24.5
Liquid Limit [%]	23
Plastic Limit [%]	14
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.164
Consistency Index	-0.164
Activity Index	
Water Content of Material <425 µm [%]	24.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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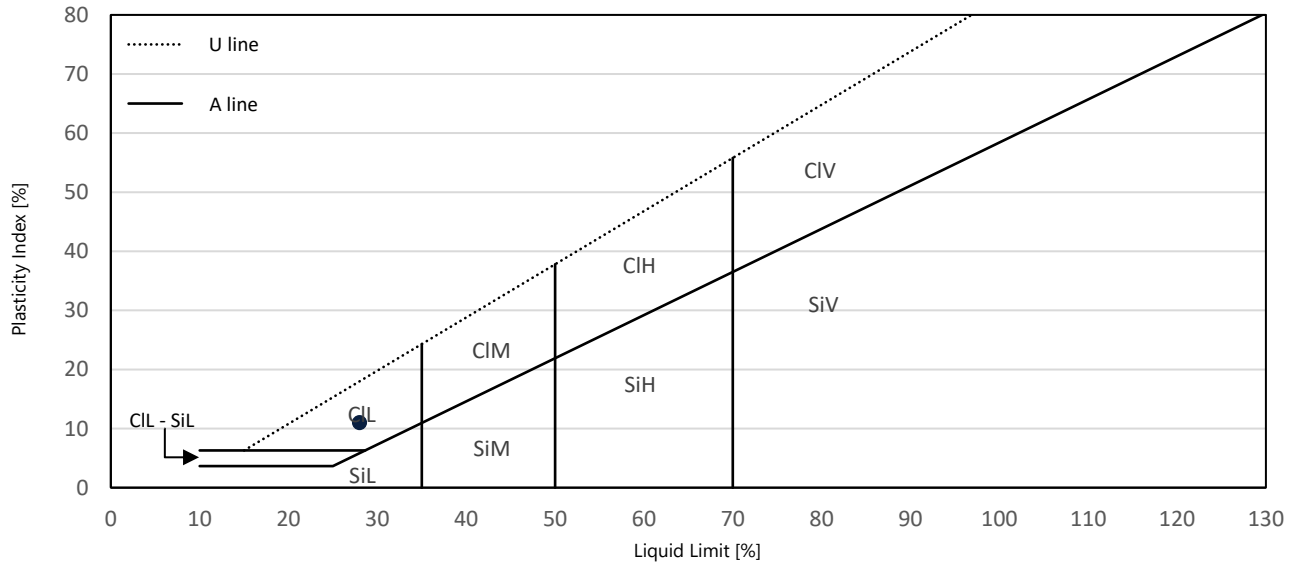
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly sandy gravelly CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	25.0
Liquid Limit [%]	28
Plastic Limit [%]	17
Plasticity Index [%]	11
% Passing 425 µm BS Sieve [%]	36
Optional Reporting Items	
Liquidity Index	4.788
Consistency Index	-3.788
Activity Index	
Water Content of Material <425 µm [%]	69.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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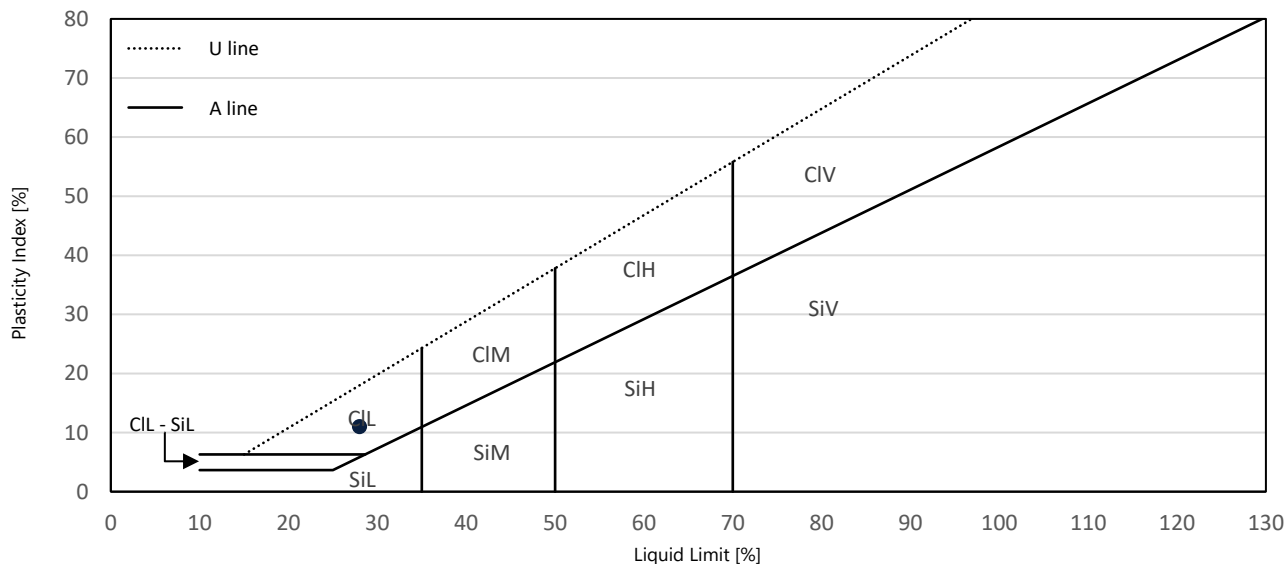
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	33.9
Liquid Limit [%]	28
Plastic Limit [%]	17
Plasticity Index [%]	11
% Passing 425 µm BS Sieve [%]	91
Optional Reporting Items	
Liquidity Index	1.853
Consistency Index	-0.853
Activity Index	
Water Content of Material <425 µm [%]	37.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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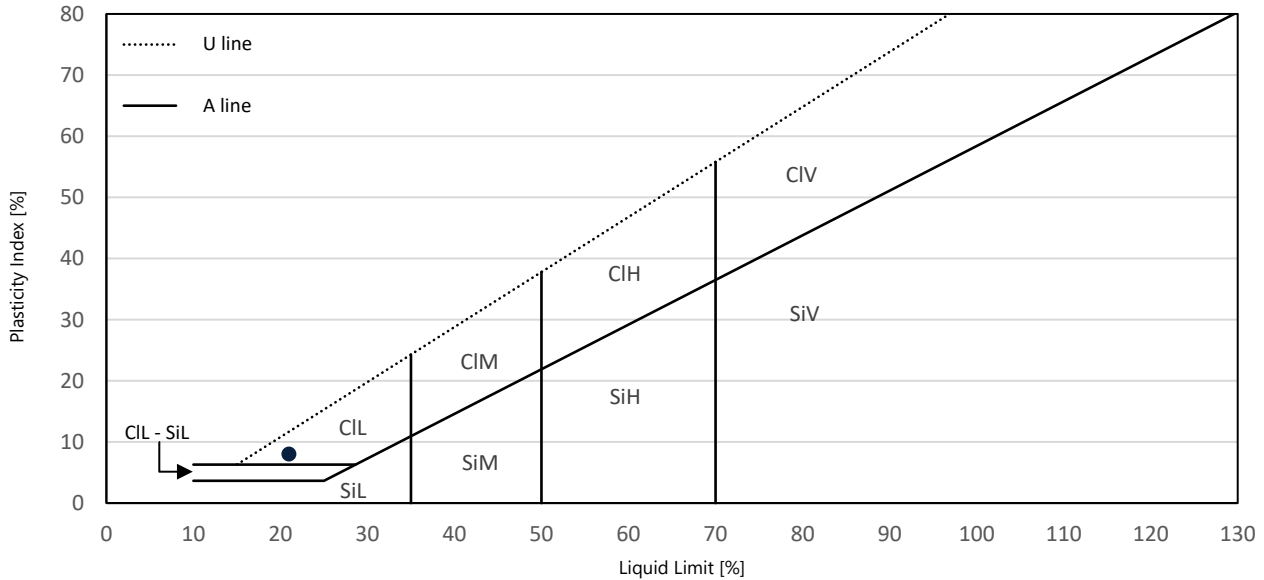
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly gravelly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	21.7
Liquid Limit [%]	21
Plastic Limit [%]	13
Plasticity Index [%]	8
% Passing 425 µm BS Sieve [%]	97
Optional Reporting Items	
Liquidity Index	1.164
Consistency Index	-0.164
Activity Index	
Water Content of Material <425 µm [%]	22.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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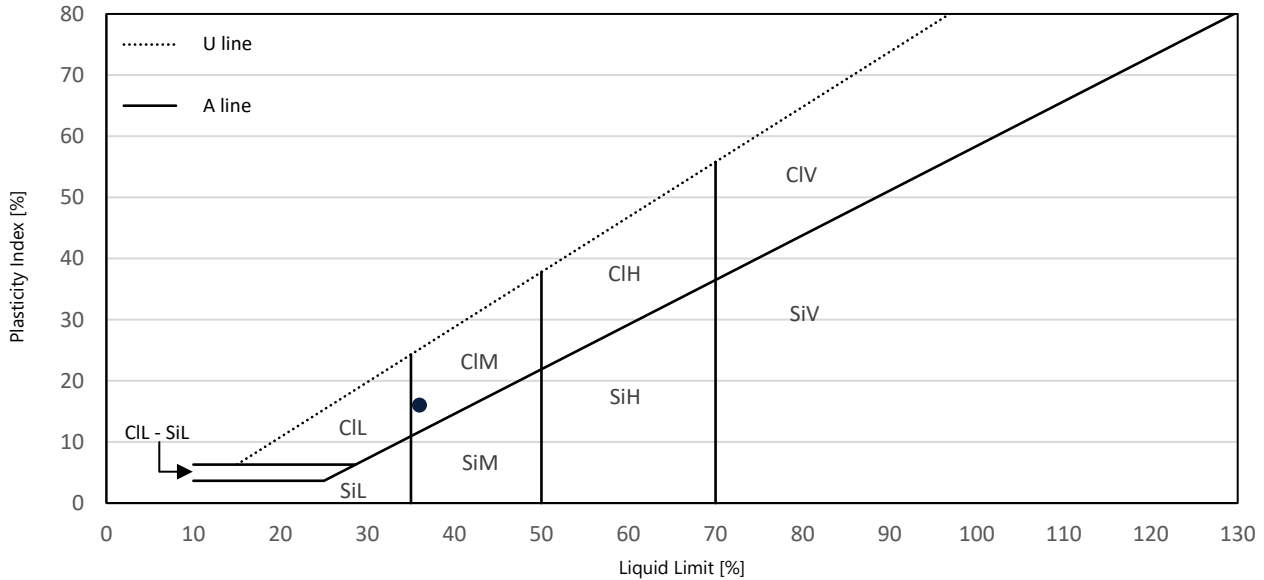
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly sand CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	18.1
Liquid Limit [%]	36
Plastic Limit [%]	20
Plasticity Index [%]	16
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	-0.121
Consistency Index	1.121
Activity Index	
Water Content of Material <425 µm [%]	18.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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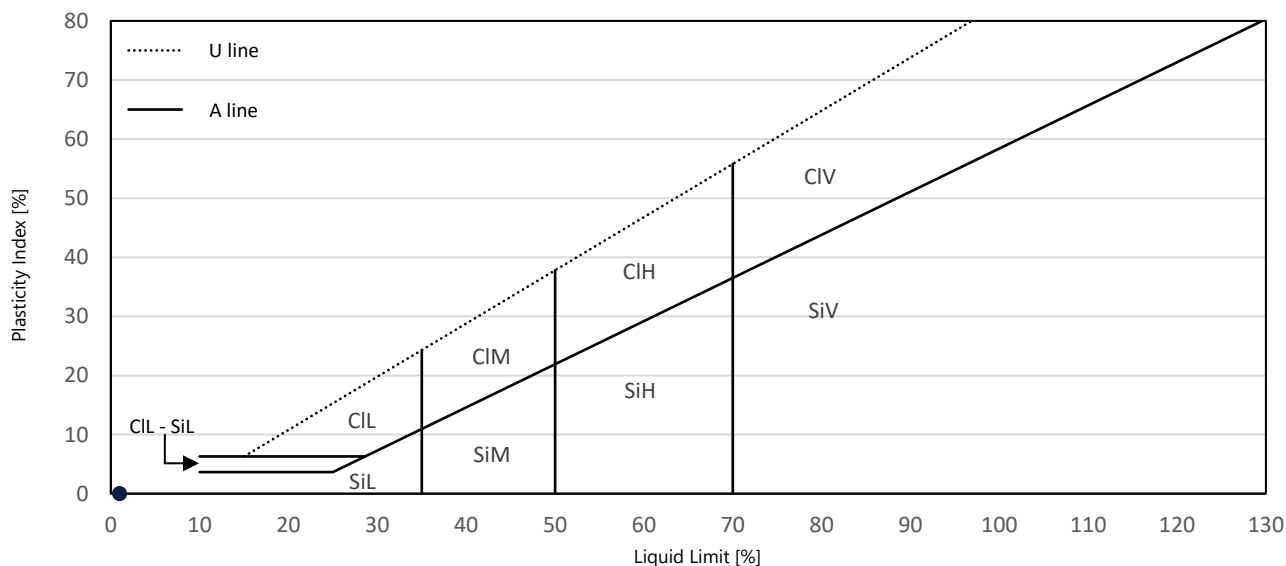
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.60
Specimen Description	Grey clayey gravelly SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	5.9
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	64
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	9.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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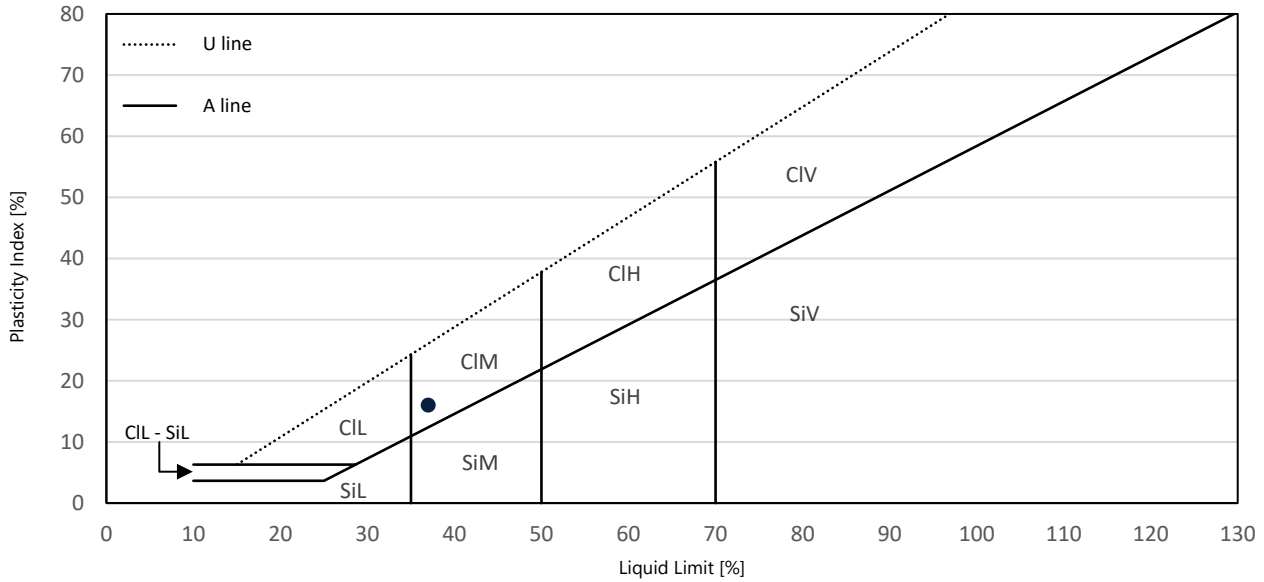
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.80
Specimen Description	Grey slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	43



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	20.0
Liquid Limit [%]	37
Plastic Limit [%]	21
Plasticity Index [%]	16
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	-0.062
Consistency Index	1.062
Activity Index	
Water Content of Material <425 µm [%]	20.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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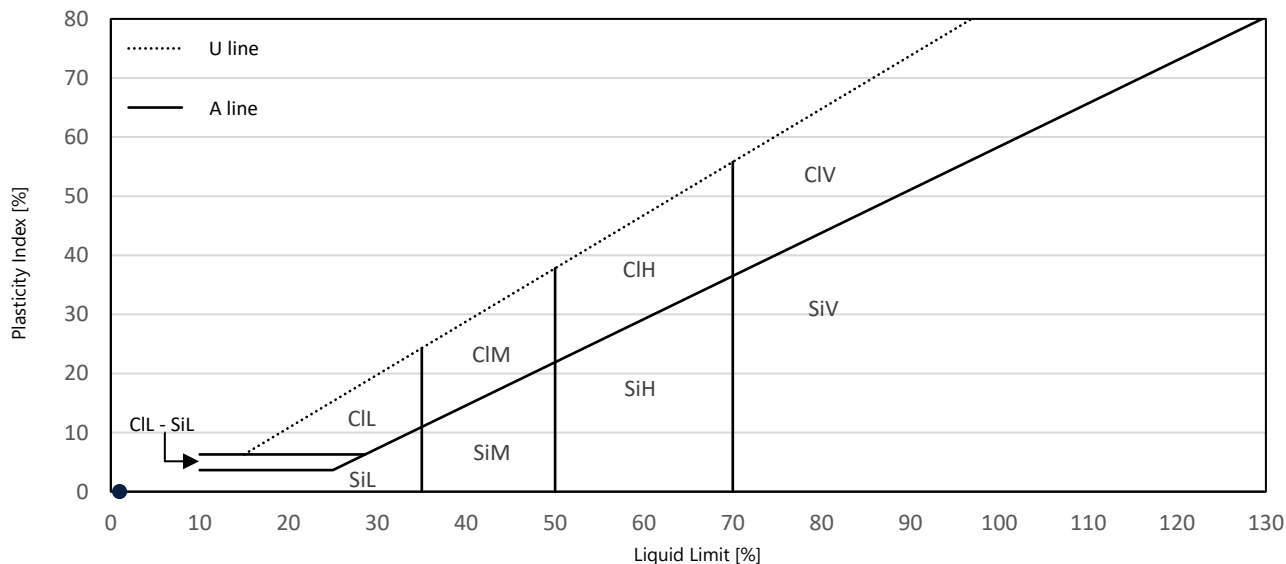
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.3
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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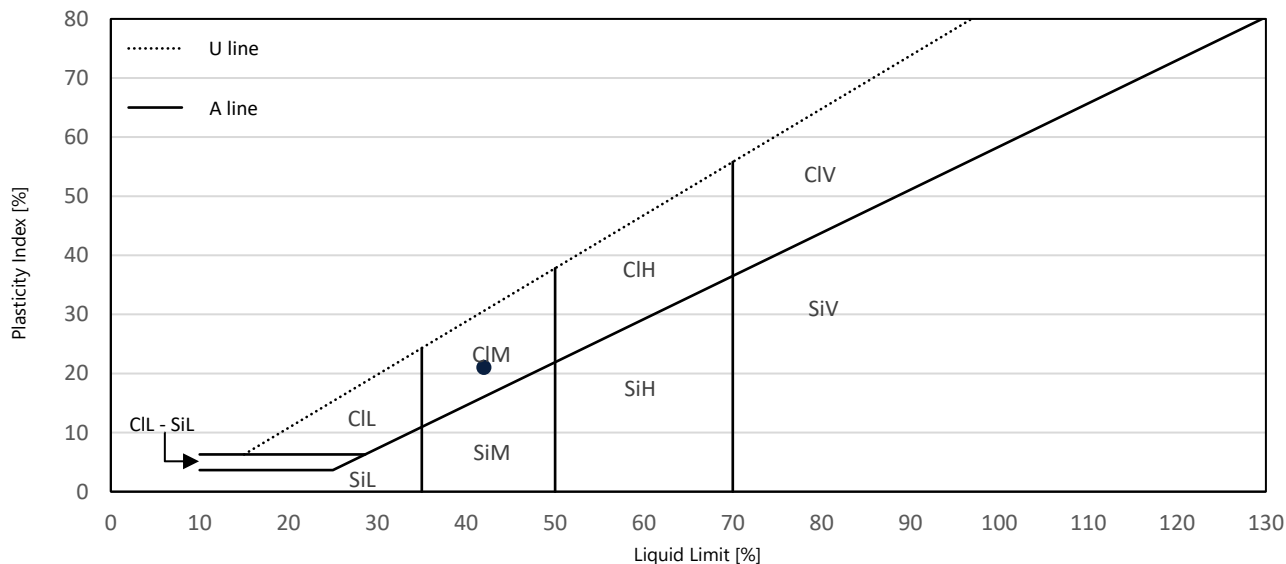
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.8
Liquid Limit [%]	42
Plastic Limit [%]	21
Plasticity Index [%]	21
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.134
Consistency Index	0.866
Activity Index	
Water Content of Material <425 µm [%]	23.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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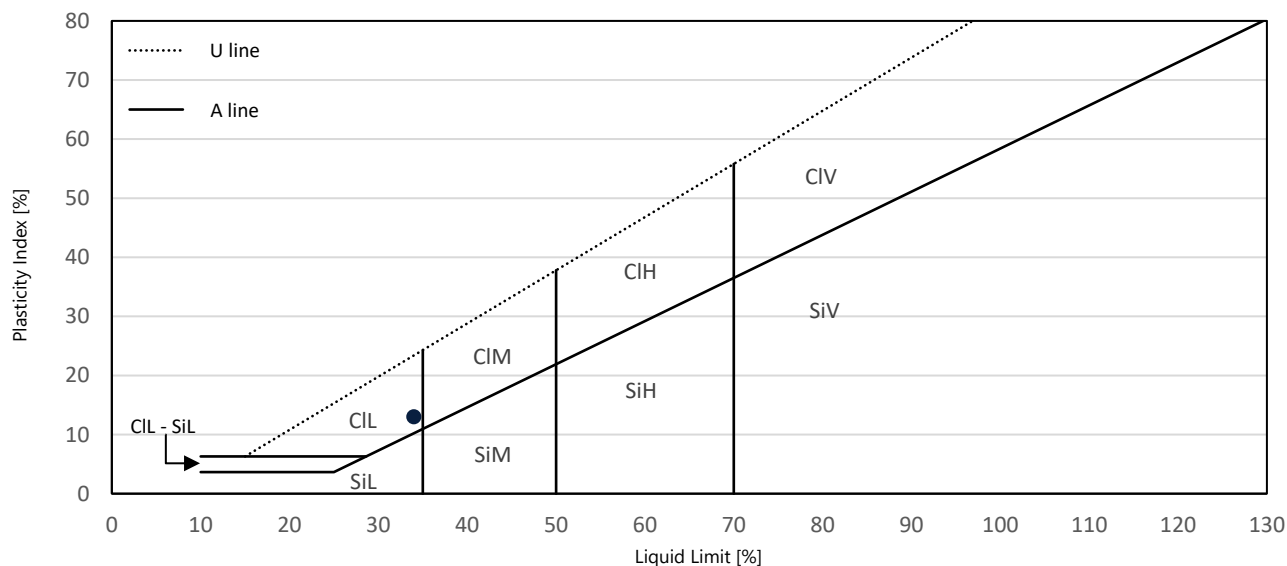
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
Specimen Description	Grey slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	43



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	19.9
Liquid Limit [%]	34
Plastic Limit [%]	21
Plasticity Index [%]	13
% Passing 425 µm BS Sieve [%]	92
Optional Reporting Items	
Liquidity Index	0.052
Consistency Index	0.948
Activity Index	
Water Content of Material <425 µm [%]	21.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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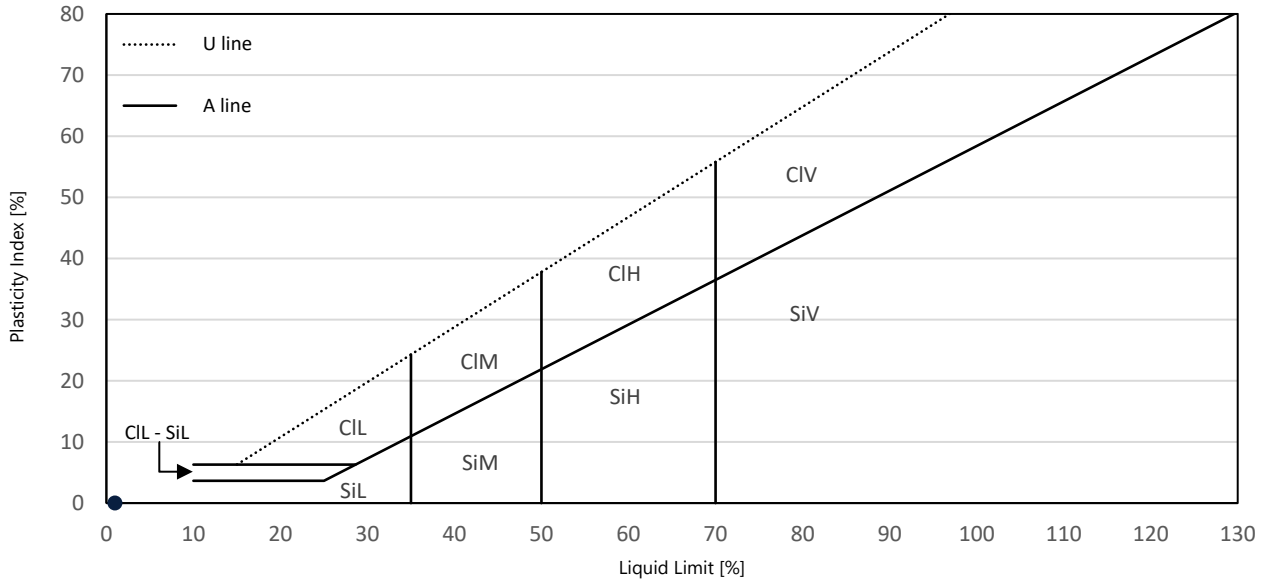
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.2
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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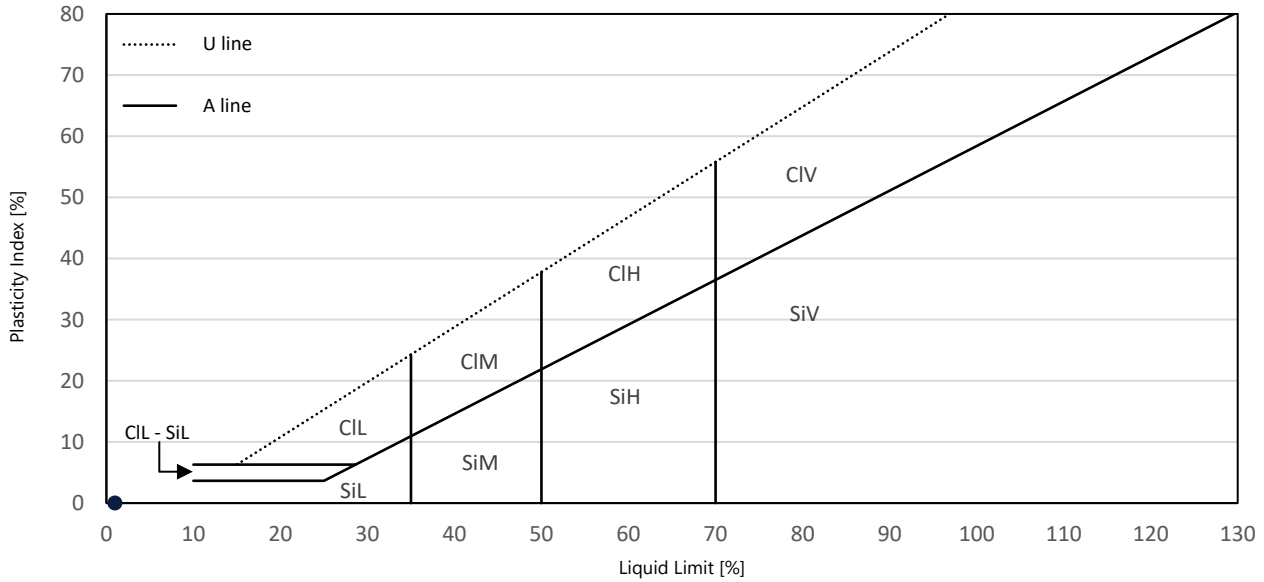
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	17.6
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	17.6

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

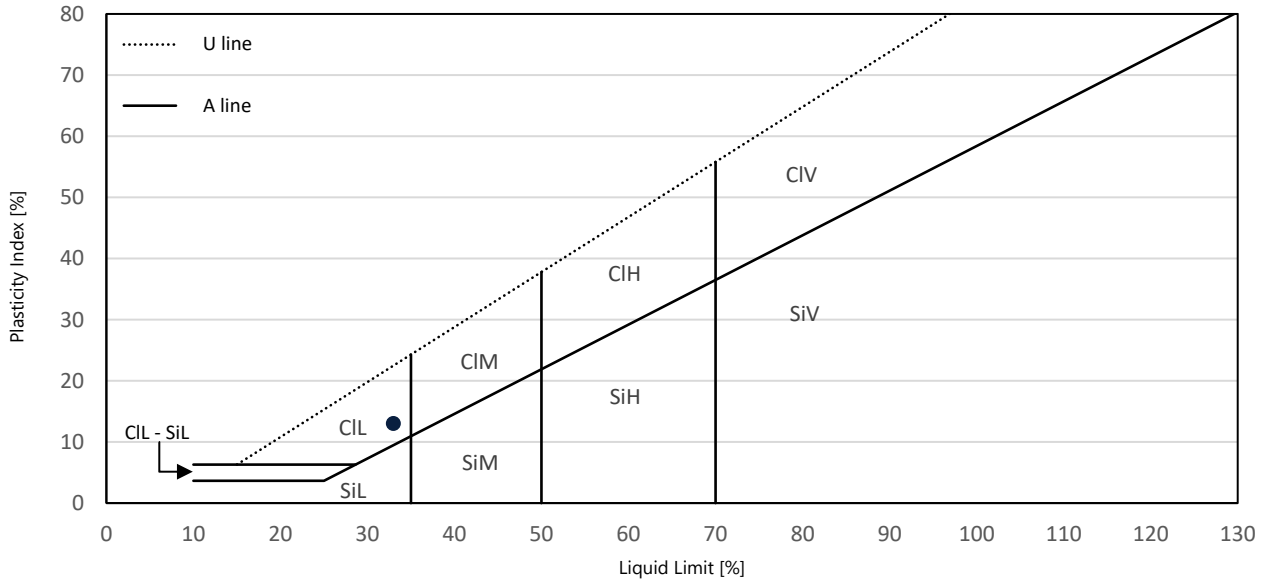
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	42



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	26.1
Liquid Limit [%]	33
Plastic Limit [%]	20
Plasticity Index [%]	13
% Passing 425 µm BS Sieve [%]	80
Optional Reporting Items	
Liquidity Index	0.973
Consistency Index	0.027
Activity Index	
Water Content of Material <425 µm [%]	32.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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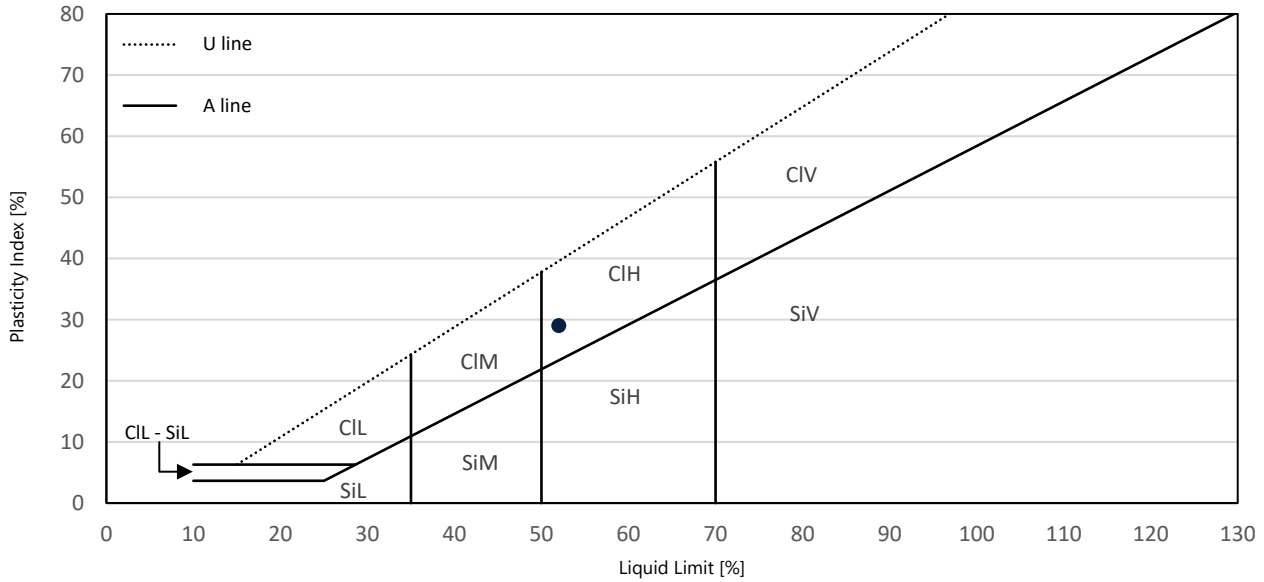
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	29.0
Liquid Limit [%]	52
Plastic Limit [%]	23
Plasticity Index [%]	29
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.207
Consistency Index	0.793
Activity Index	
Water Content of Material <425 µm [%]	29.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

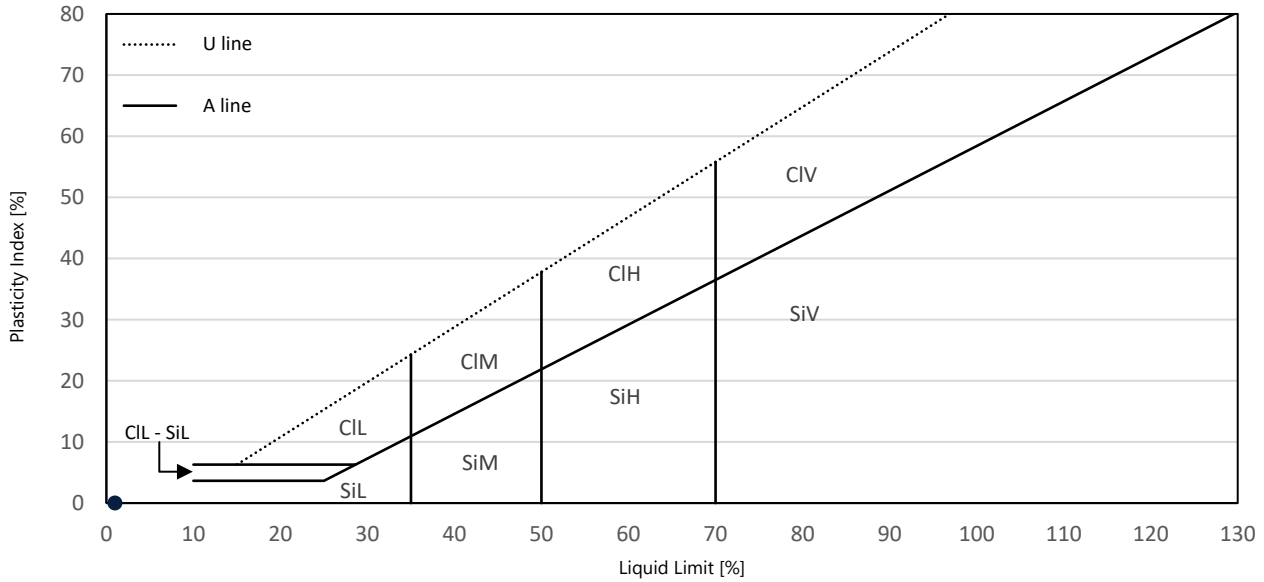
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.50
Specimen Description	Brown SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	21.7
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	21.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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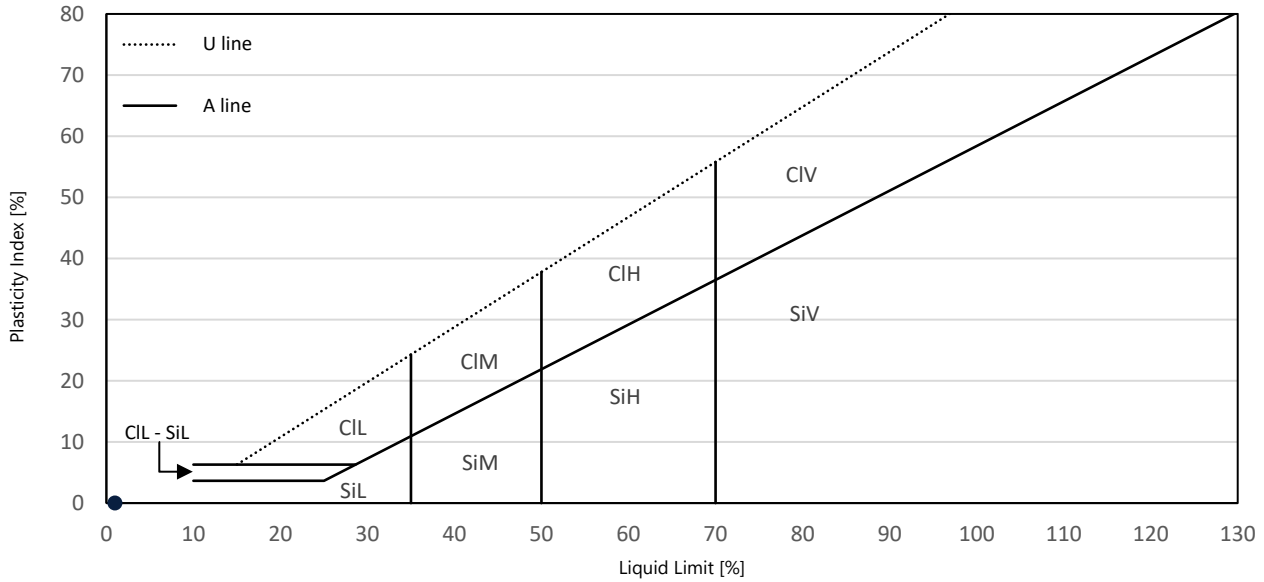
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.50
Specimen Description	Brown slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	18.0
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	18.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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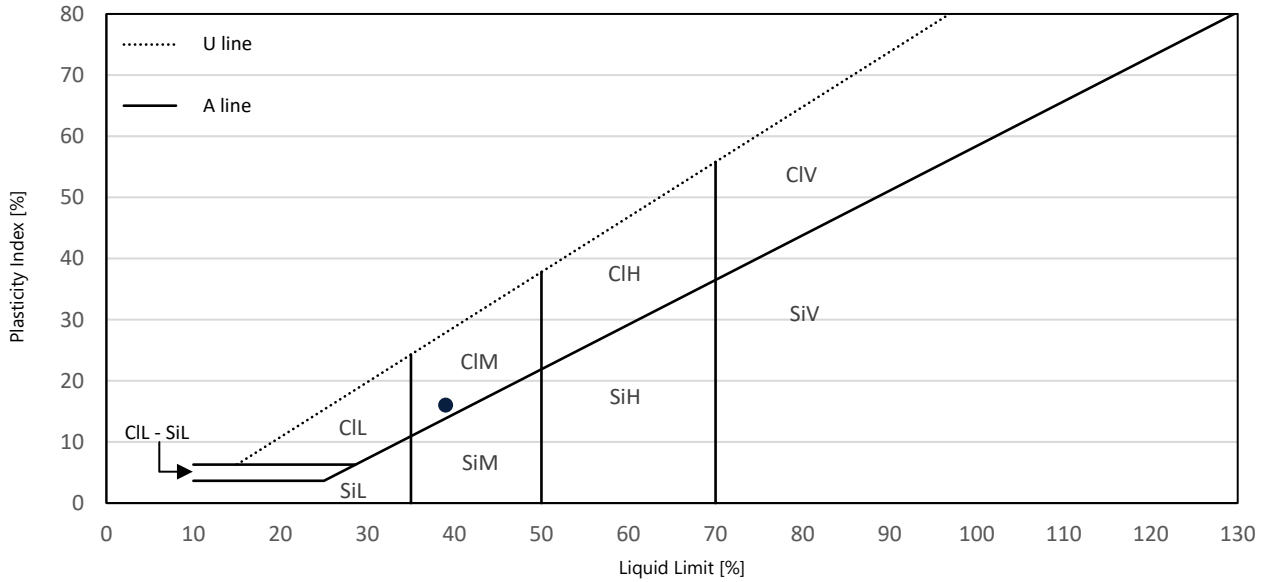
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.20
Specimen Description	Brown slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	22.8
Liquid Limit [%]	39
Plastic Limit [%]	23
Plasticity Index [%]	16
% Passing 425 µm BS Sieve [%]	94
Optional Reporting Items	
Liquidity Index	0.079
Consistency Index	0.921
Activity Index	
Water Content of Material <425 µm [%]	24.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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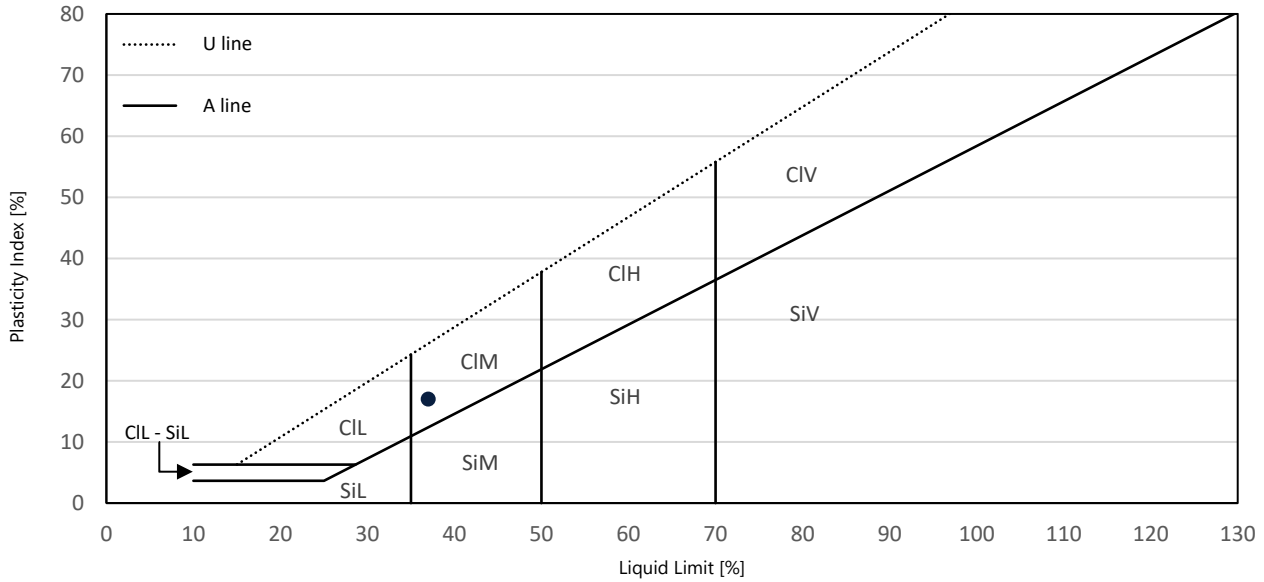
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.90
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	24.7
Liquid Limit [%]	37
Plastic Limit [%]	20
Plasticity Index [%]	17
% Passing 425 µm BS Sieve [%]	69
Optional Reporting Items	
Liquidity Index	0.919
Consistency Index	0.081
Activity Index	
Water Content of Material <425 µm [%]	35.6

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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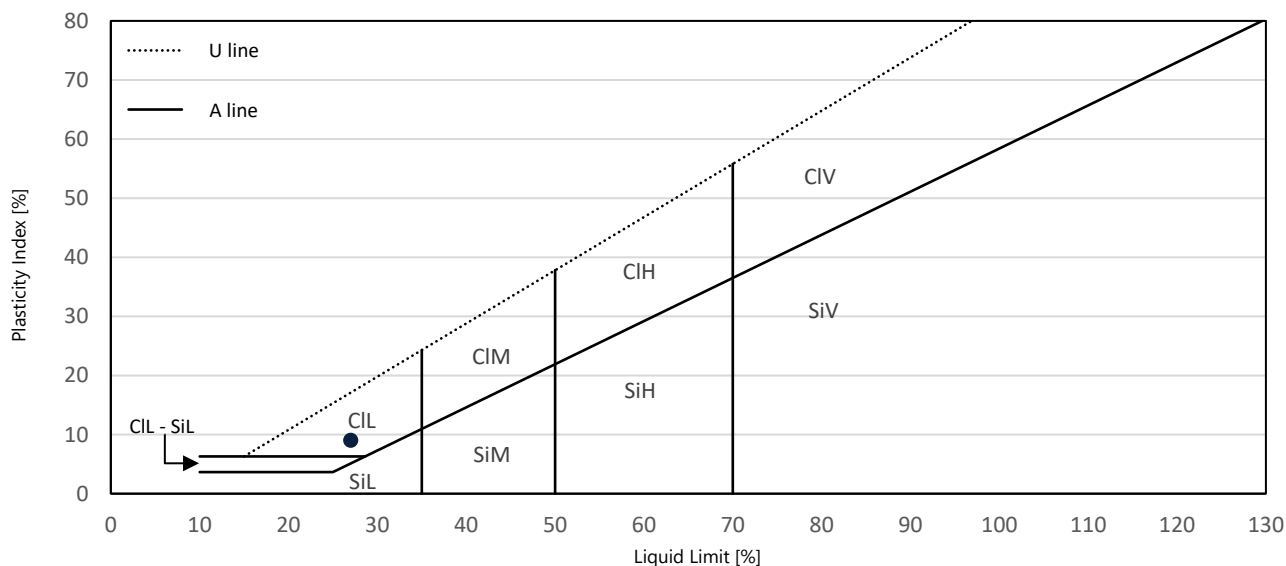
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.9
Liquid Limit [%]	27
Plastic Limit [%]	18
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.655
Consistency Index	0.345
Activity Index	
Water Content of Material <425 µm [%]	23.9

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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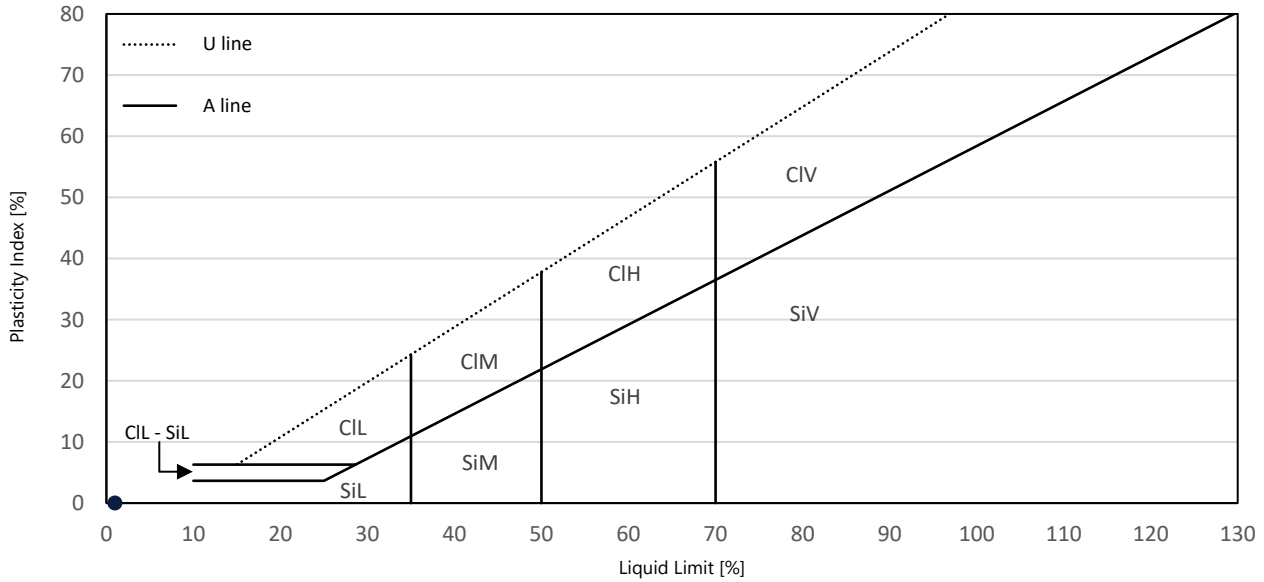
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.5
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	23.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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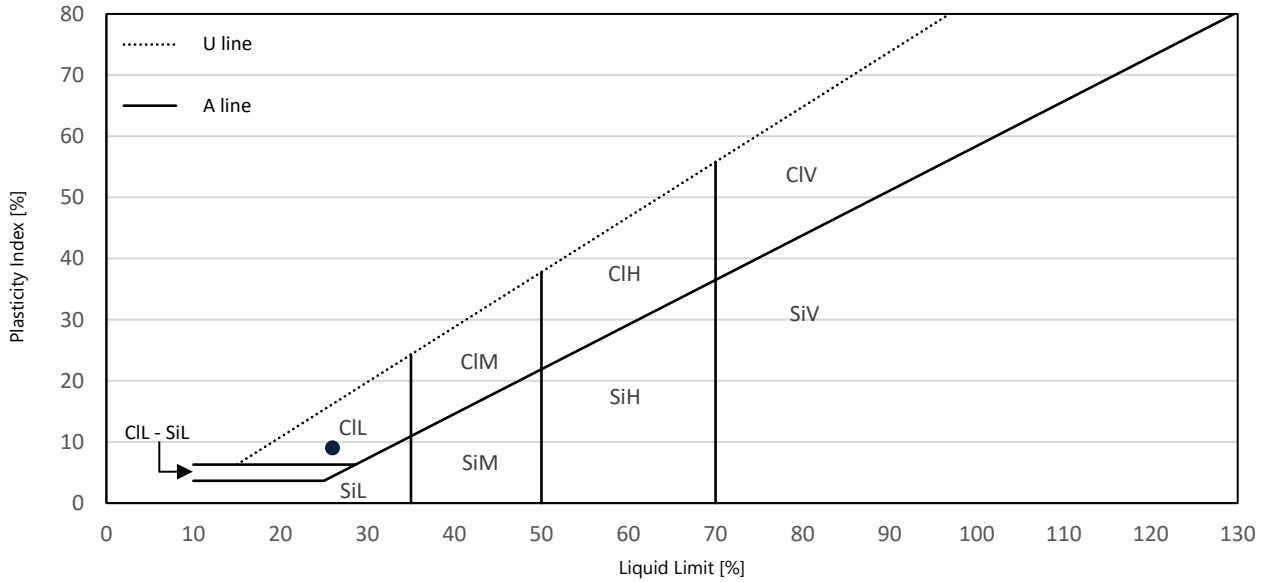
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly sandy gravelly CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	17.1
Liquid Limit [%]	26
Plastic Limit [%]	17
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	34
Optional Reporting Items	
Liquidity Index	3.714
Consistency Index	-2.714
Activity Index	
Water Content of Material <425 µm [%]	50.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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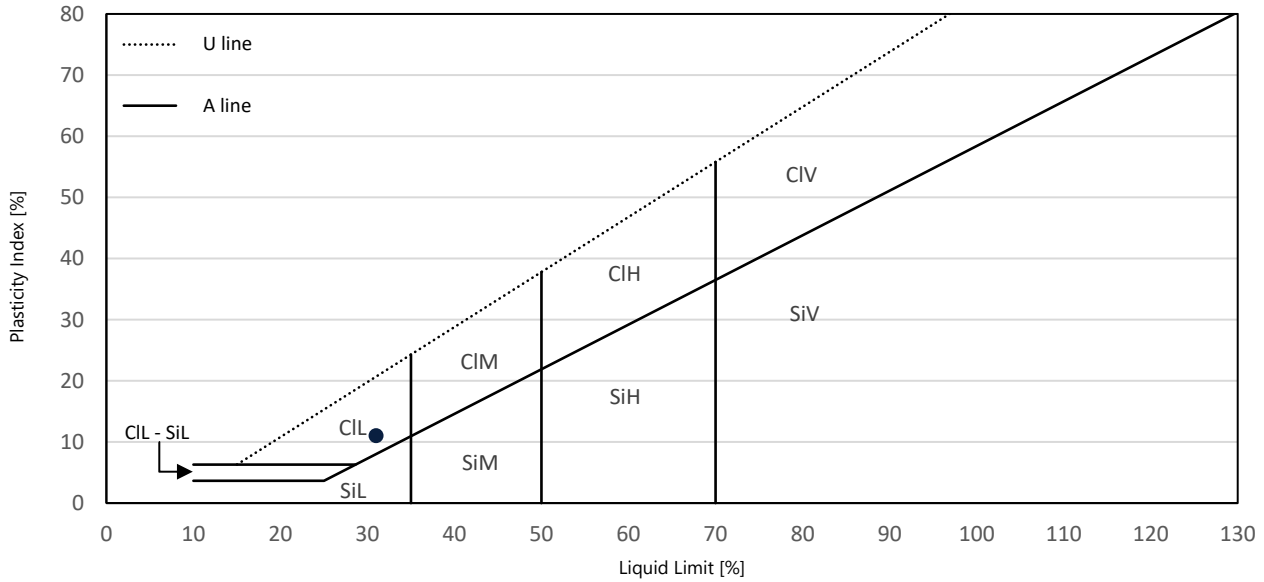
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.70
Specimen Description	Brown slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	39



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	15.7
Liquid Limit [%]	31
Plastic Limit [%]	20
Plasticity Index [%]	11
% Passing 425 µm BS Sieve [%]	86
Optional Reporting Items	
Liquidity Index	-0.163
Consistency Index	1.163
Activity Index	
Water Content of Material <425 µm [%]	18.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Four point liquid limit test.				

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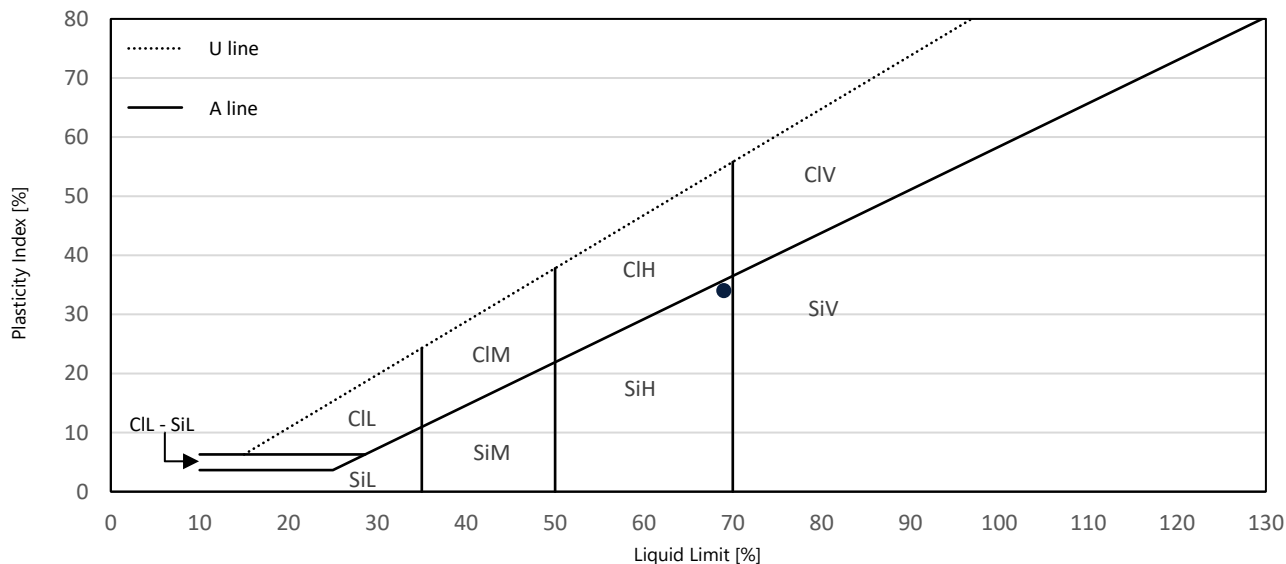
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Brown slightly sandy clayey SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	38.1
Liquid Limit [%]	69
Plastic Limit [%]	35
Plasticity Index [%]	34
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.091
Consistency Index	0.909
Activity Index	
Water Content of Material <425 µm [%]	38.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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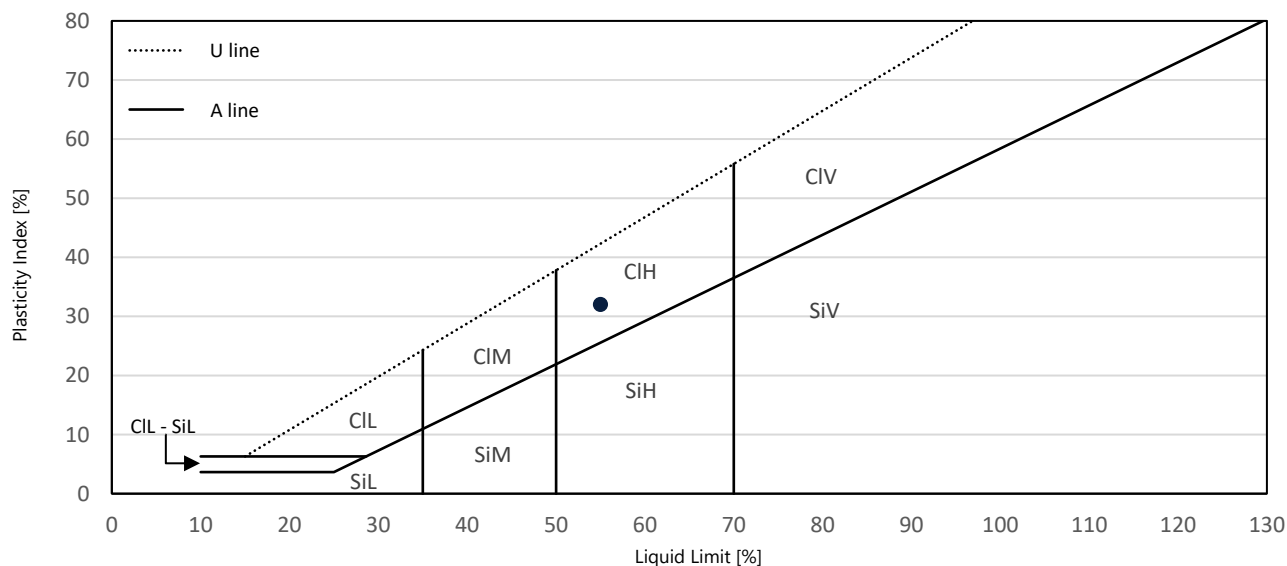
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	UT#B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	36.8
Liquid Limit [%]	55
Plastic Limit [%]	23
Plasticity Index [%]	32
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.430
Consistency Index	0.570
Activity Index	
Water Content of Material <425 µm [%]	36.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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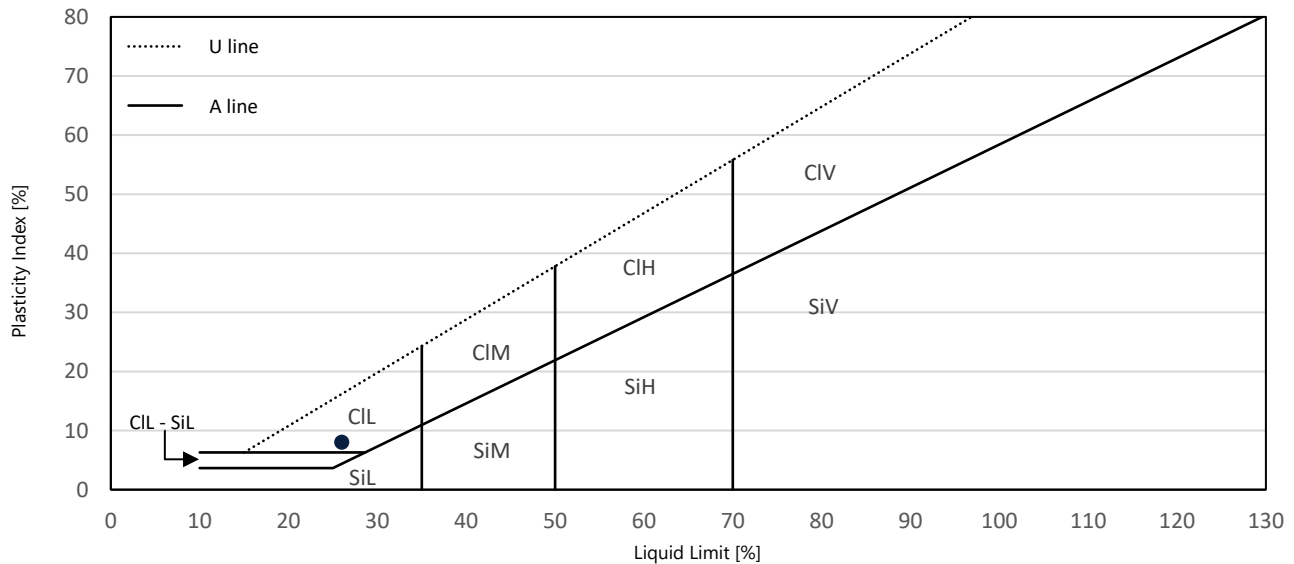
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.90
Specimen Description	Brown slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.1
Liquid Limit [%]	26
Plastic Limit [%]	18
Plasticity Index [%]	8
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.509
Consistency Index	0.491
Activity Index	
Water Content of Material <425 µm [%]	22.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

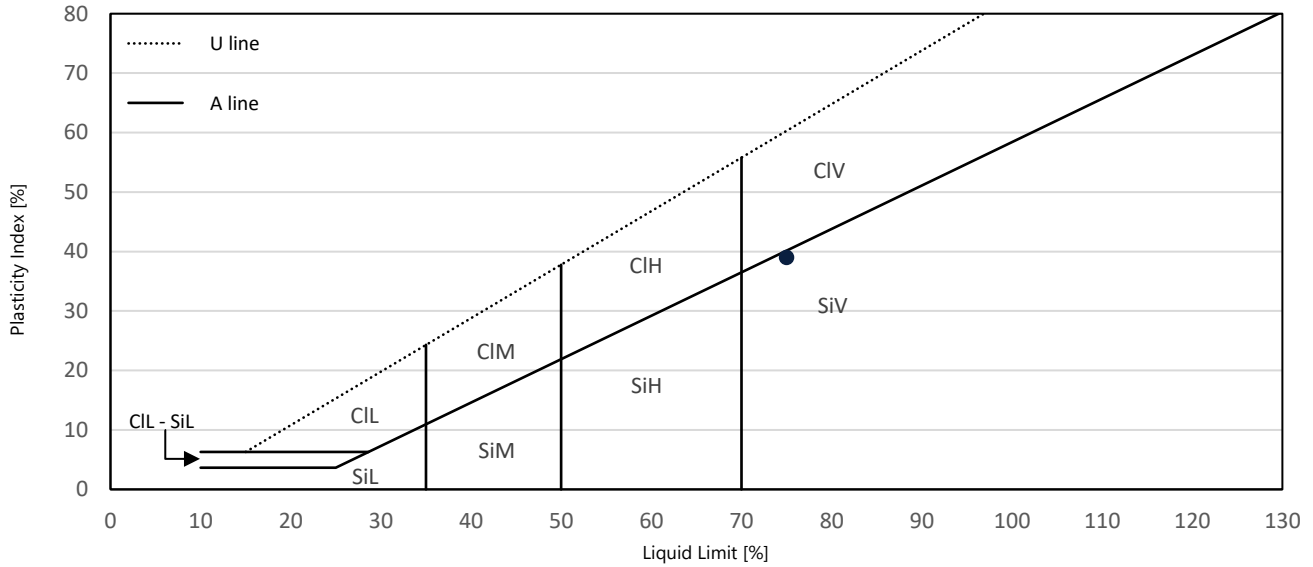
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.50
Specimen Description	Brown slightly sandy clayey SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	41.6
Liquid Limit [%]	75
Plastic Limit [%]	36
Plasticity Index [%]	39
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.143
Consistency Index	0.857
Activity Index	
Water Content of Material <425 µm [%]	41.6

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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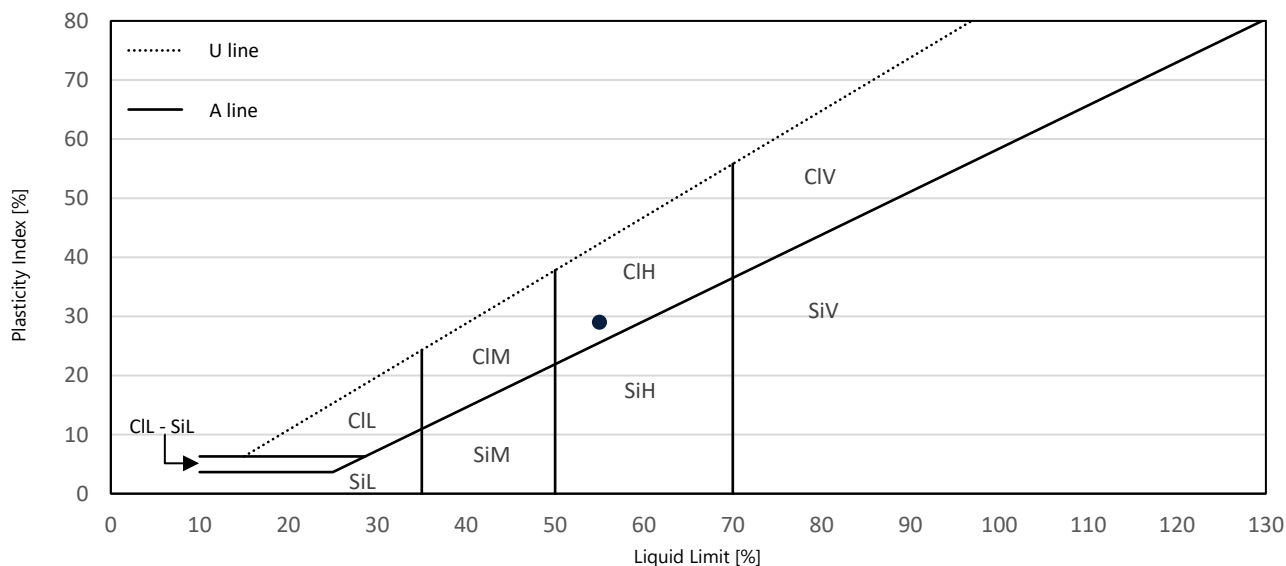
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.70
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	31.5
Liquid Limit [%]	55
Plastic Limit [%]	26
Plasticity Index [%]	29
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.190
Consistency Index	0.810
Activity Index	
Water Content of Material <425 µm [%]	31.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

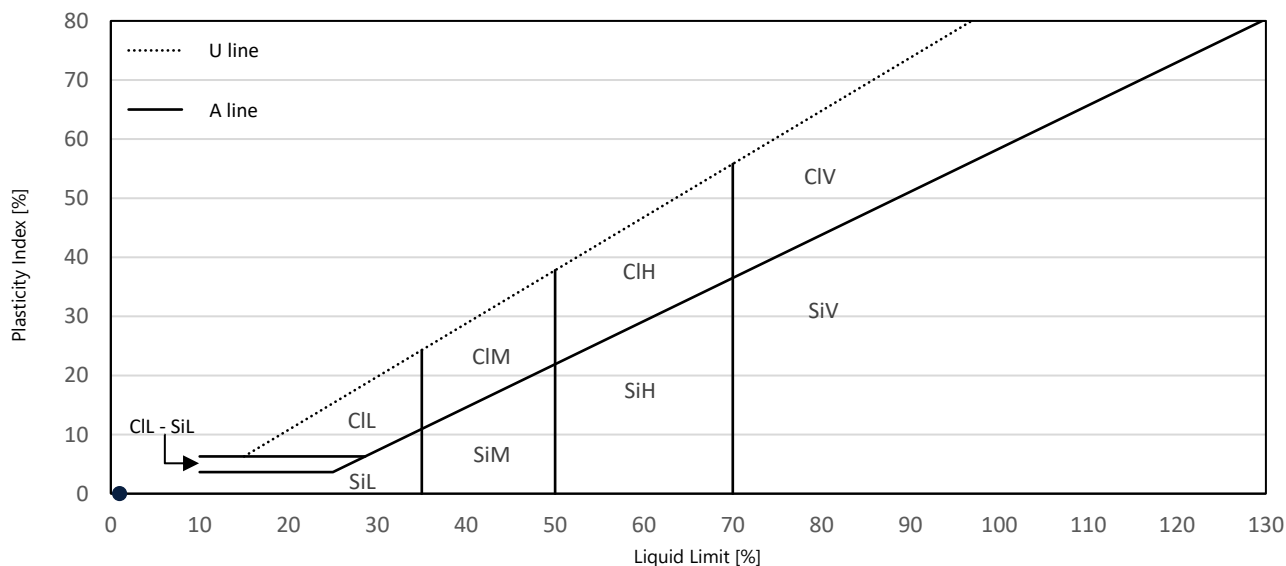
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown clayey SAND	Sample Type	UT#B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	25.7
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	25.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

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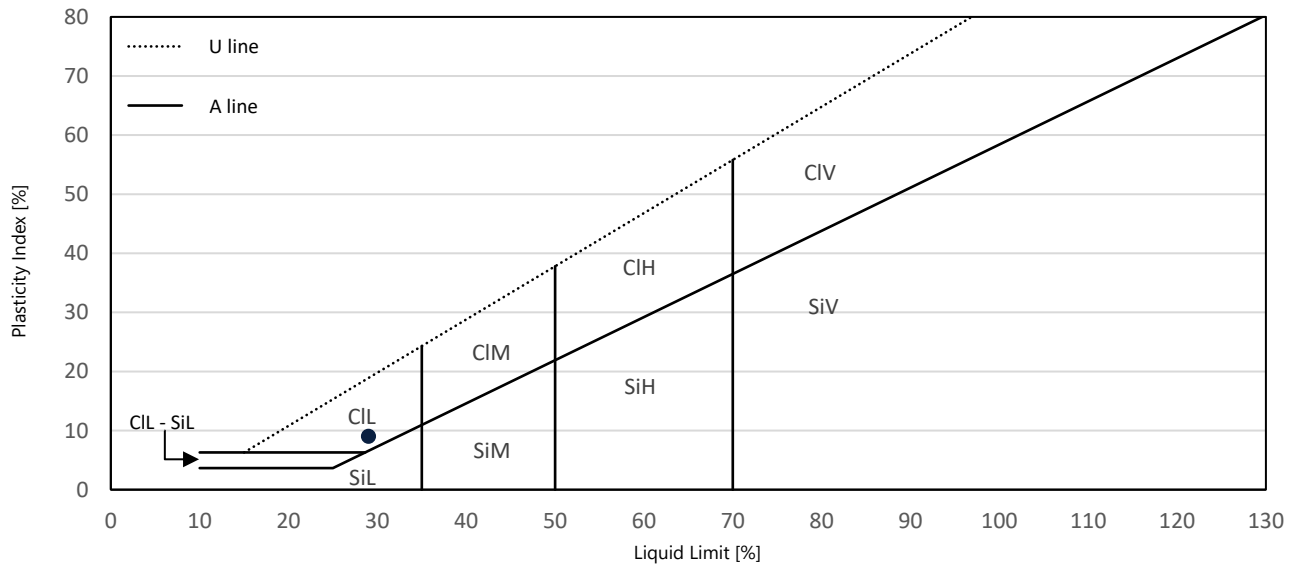
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.70
Specimen Description	Brown slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	25.7
Liquid Limit [%]	29
Plastic Limit [%]	20
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.629
Consistency Index	0.371
Activity Index	
Water Content of Material <425 µm [%]	25.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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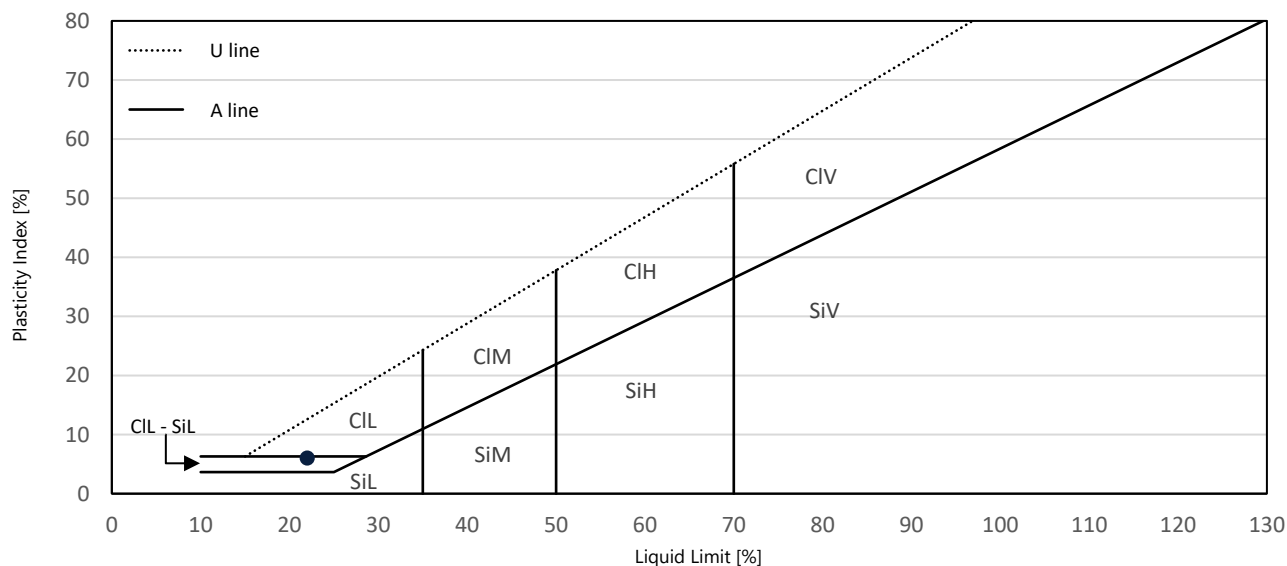
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH101
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.00
Specimen Description	Brown sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	46



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	23.0
Liquid Limit [%]	22
Plastic Limit [%]	16
Plasticity Index [%]	6
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.175
Consistency Index	-0.175
Activity Index	
Water Content of Material <425 µm [%]	23.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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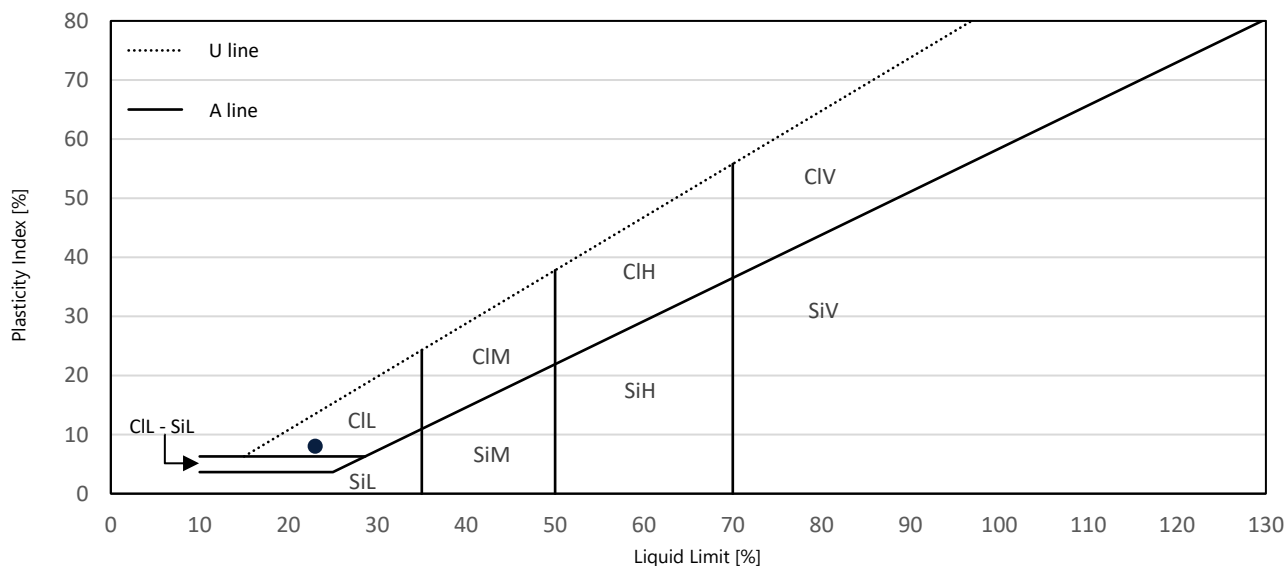
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.30
Specimen Description	Brown sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.8
Liquid Limit [%]	23
Plastic Limit [%]	15
Plasticity Index [%]	8
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.981
Consistency Index	0.019
Activity Index	
Water Content of Material <425 µm [%]	22.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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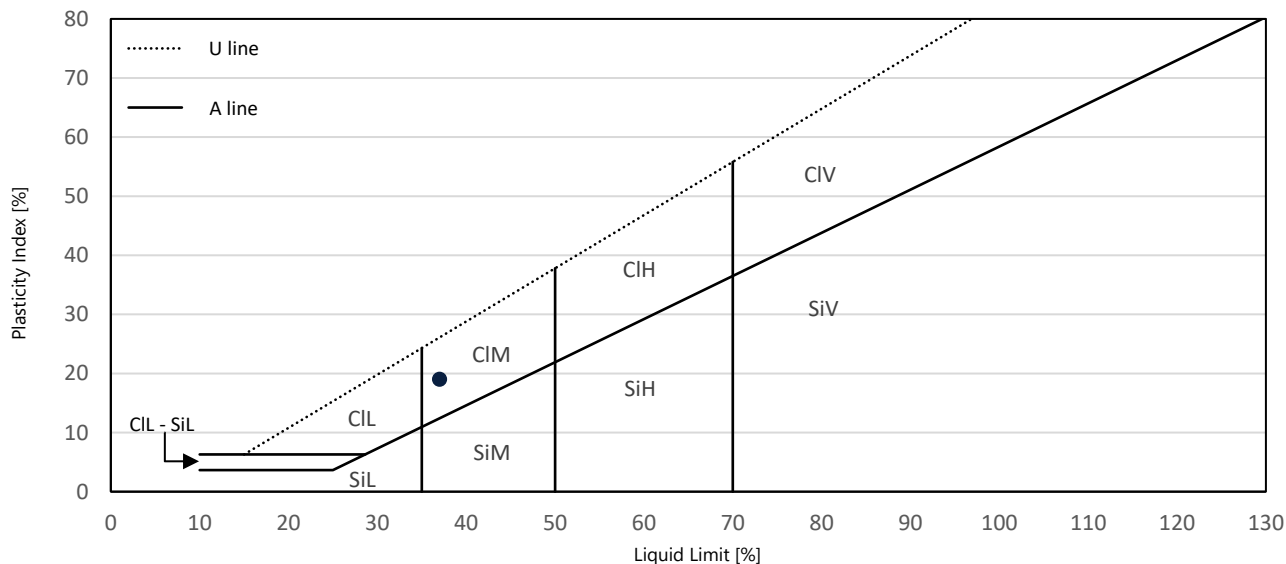
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.30
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	28.0
Liquid Limit [%]	37
Plastic Limit [%]	18
Plasticity Index [%]	19
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.525
Consistency Index	0.475
Activity Index	
Water Content of Material <425 µm [%]	28.0

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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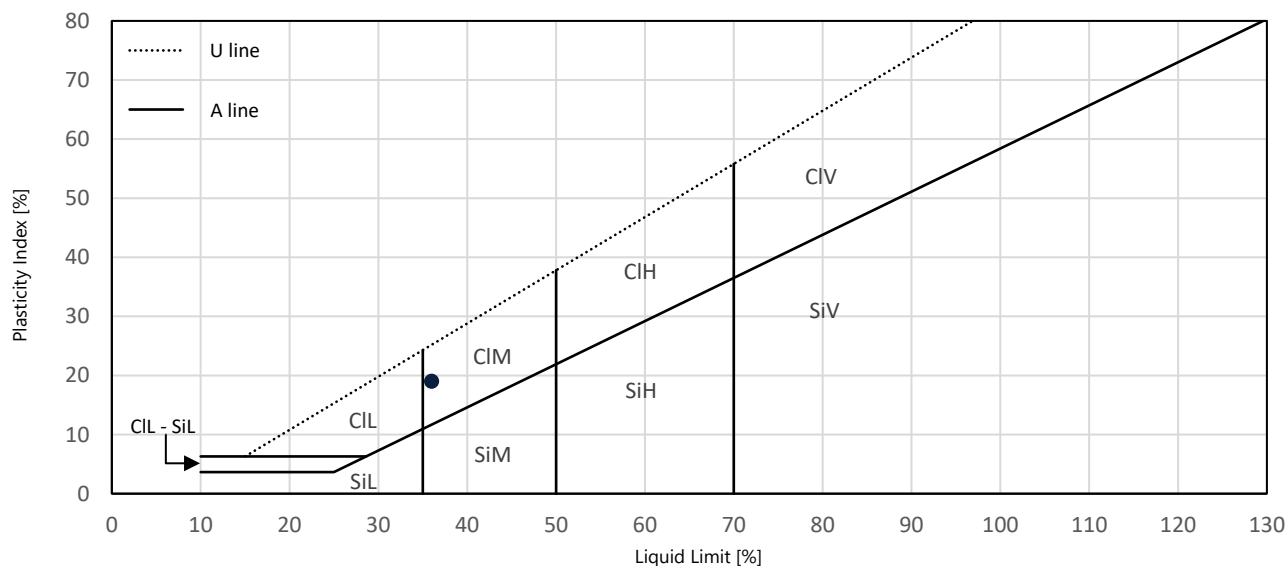
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.20
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Test Parameters	
Method	Fall cone, 1 point.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.9
Liquid Limit [%]	36
Plastic Limit [%]	17
Plasticity Index [%]	19
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.311
Consistency Index	0.689
Activity Index	
Water Content of Material <425 µm [%]	22.9
Test Data	
Liquid Limit Penetration Depth [mm]	19.5 19.6
Liquid Limit Water Content [%]	35.8 35.7
Correlation Factor	1.009

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	One point liquid limit test.				

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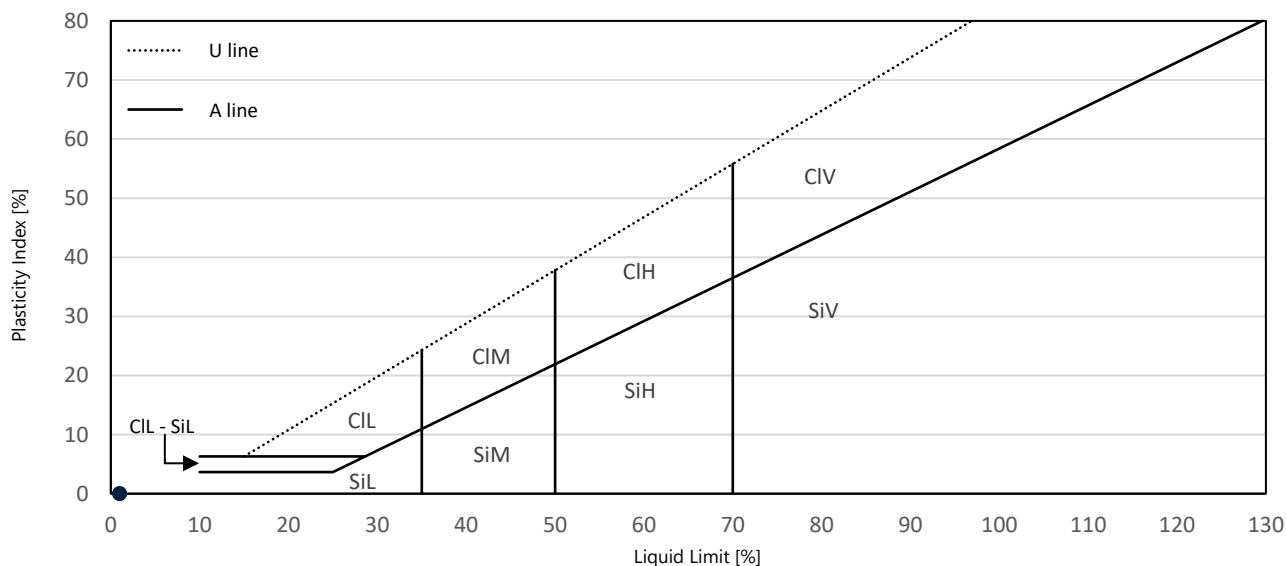
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.20
Specimen Description	Brown slightly gravelly SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	23.2
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	94
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	24.6

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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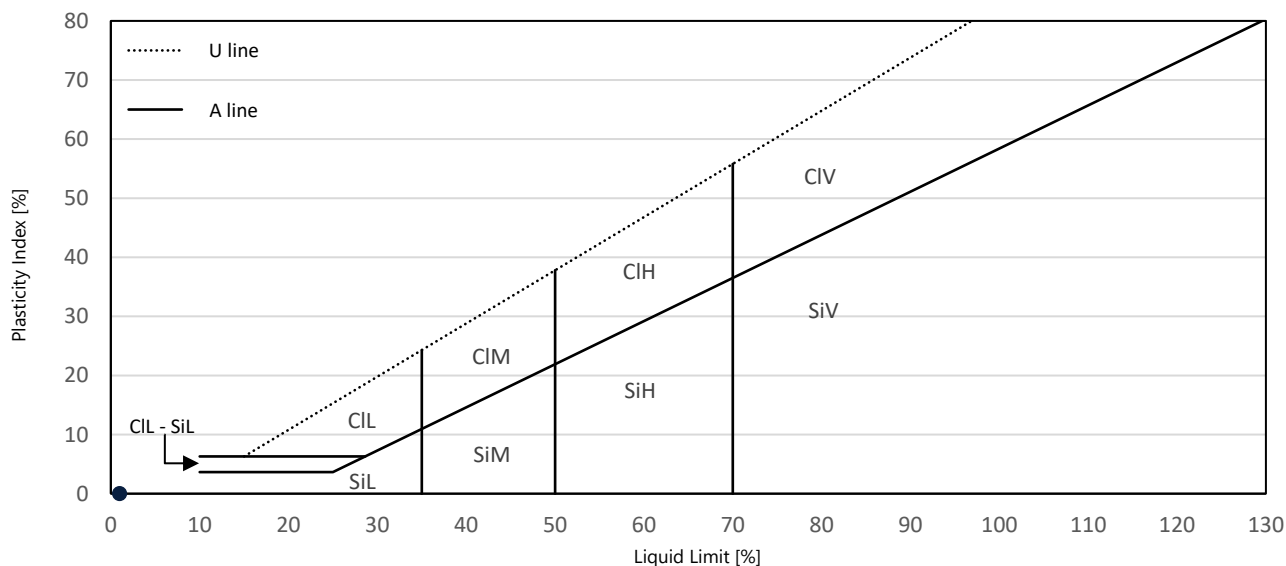
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.20
Specimen Description	Brown slightly sandy clayey GRAVEL	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	45



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after washing to remove >425µm
Mandatory Reporting Items	
As Received Water Content [%]	24.0
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	17
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	143.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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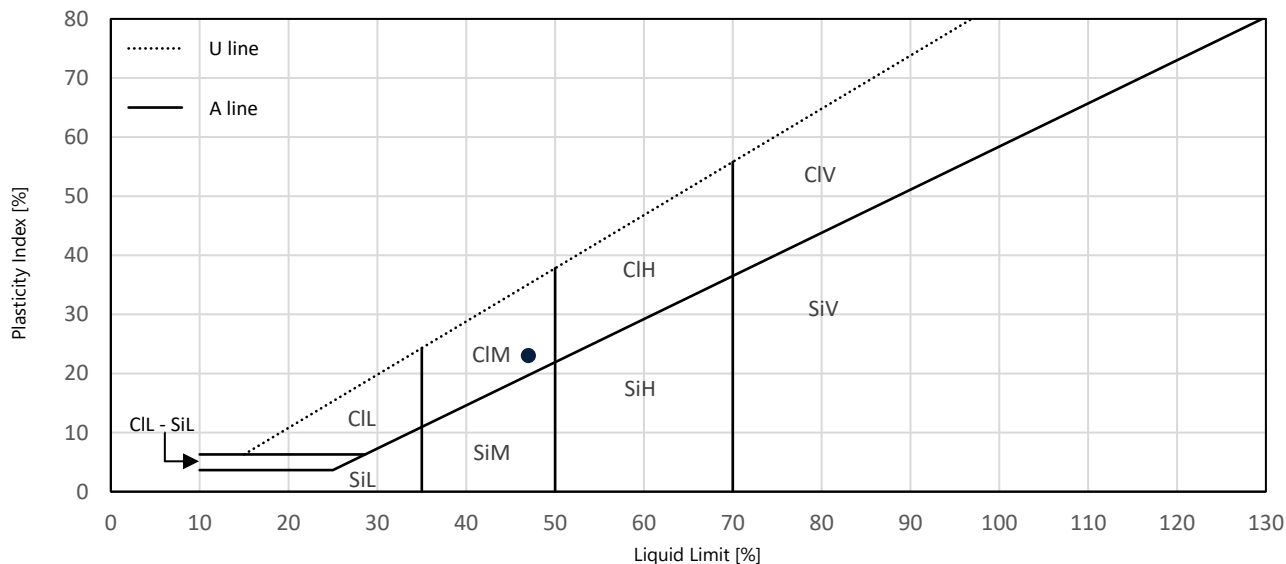
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.80
Specimen Description	Brown slightly gravelly slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	46



Test Parameters	
Method	Fall cone, 1 point.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	22.2
Liquid Limit [%]	47
Plastic Limit [%]	24
Plasticity Index [%]	23
% Passing 425 µm BS Sieve [%]	62
Optional Reporting Items	
Liquidity Index	0.502
Consistency Index	0.498
Activity Index	
Water Content of Material <425 µm [%]	35.5
Test Data	
Liquid Limit Penetration Depth [mm]	19.5
Liquid Limit Water Content [%]	46.4
Correlation Factor	1.010

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	One point liquid limit test.				

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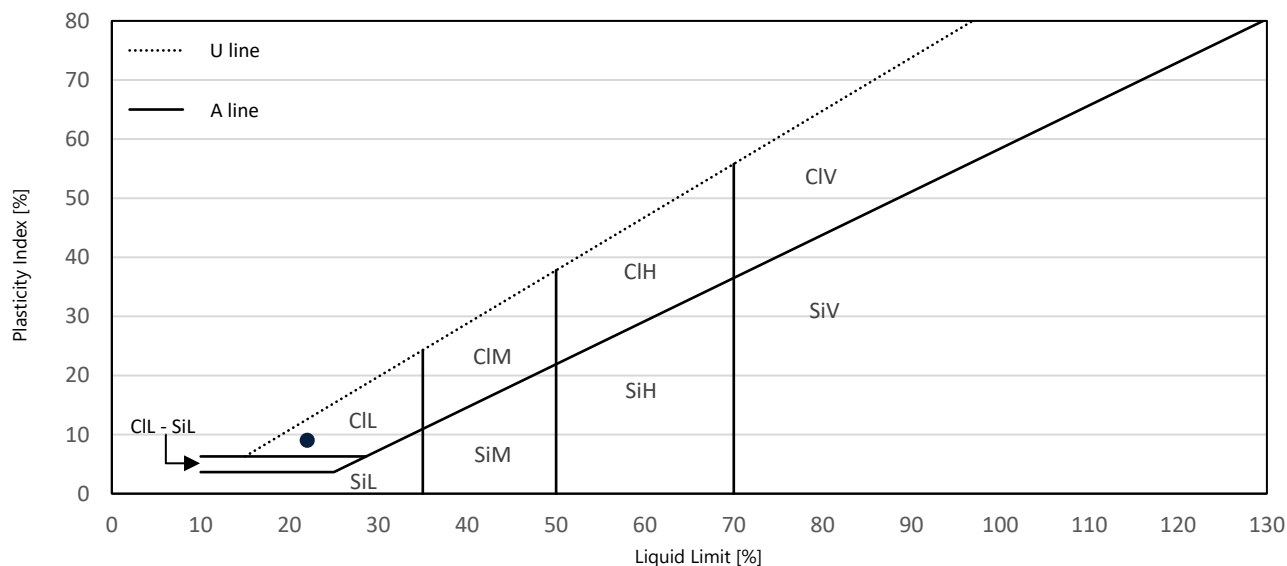
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	25.5
Liquid Limit [%]	22
Plastic Limit [%]	13
Plasticity Index [%]	9
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	1.394
Consistency Index	-0.394
Activity Index	
Water Content of Material <425 µm [%]	25.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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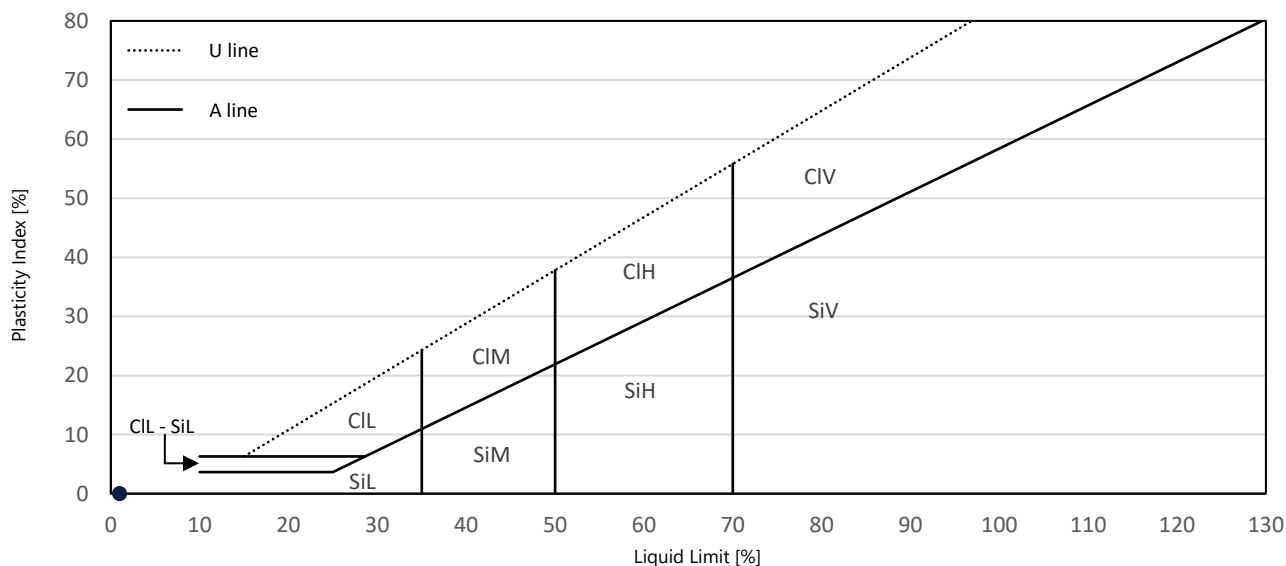
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.70
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	28.7
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	28.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

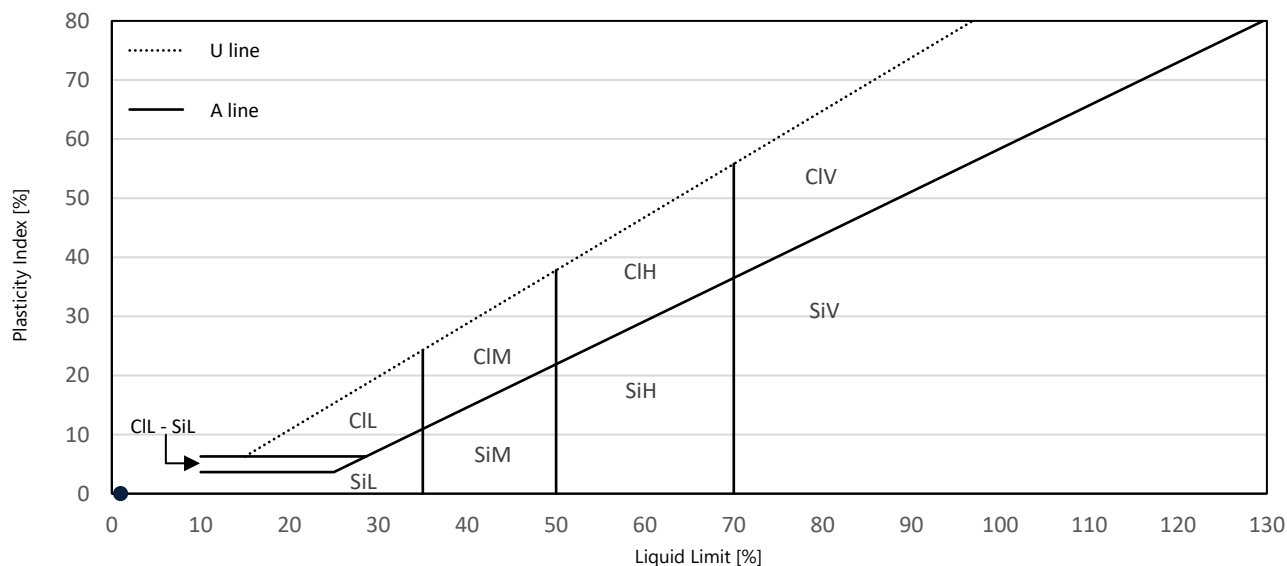
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.90
Specimen Description	Brown sandy clayey GRAVEL	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after washing to remove >425µm
Mandatory Reporting Items	
As Received Water Content [%]	19.9
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	20
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	101.1

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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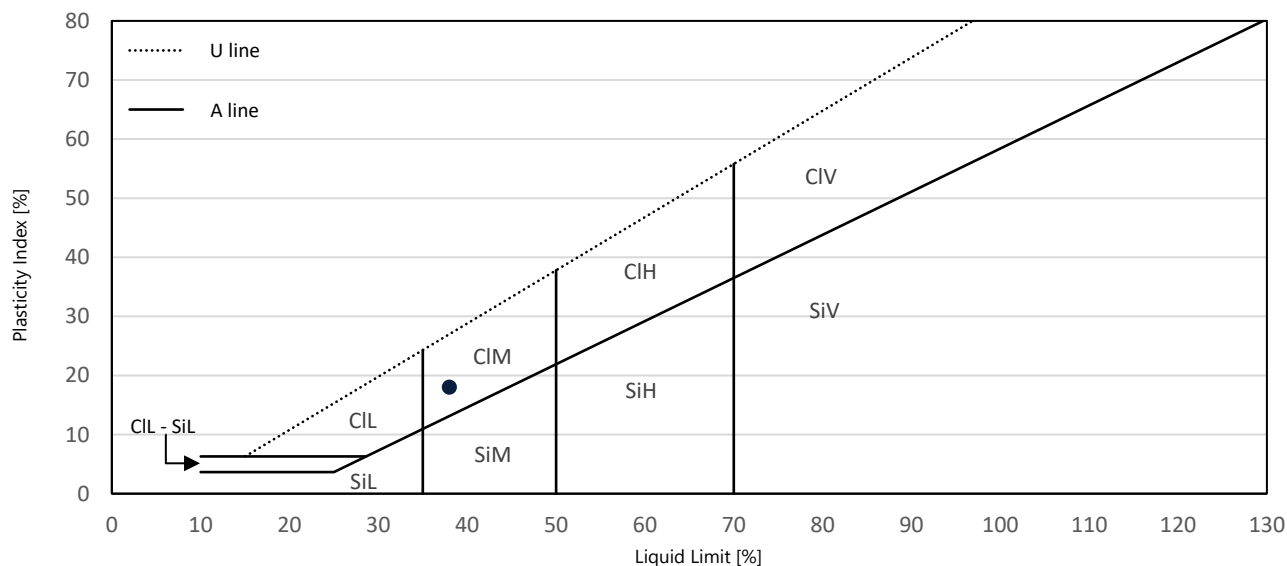
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	28.9
Liquid Limit [%]	38
Plastic Limit [%]	20
Plasticity Index [%]	18
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.494
Consistency Index	0.506
Activity Index	
Water Content of Material <425 µm [%]	28.9

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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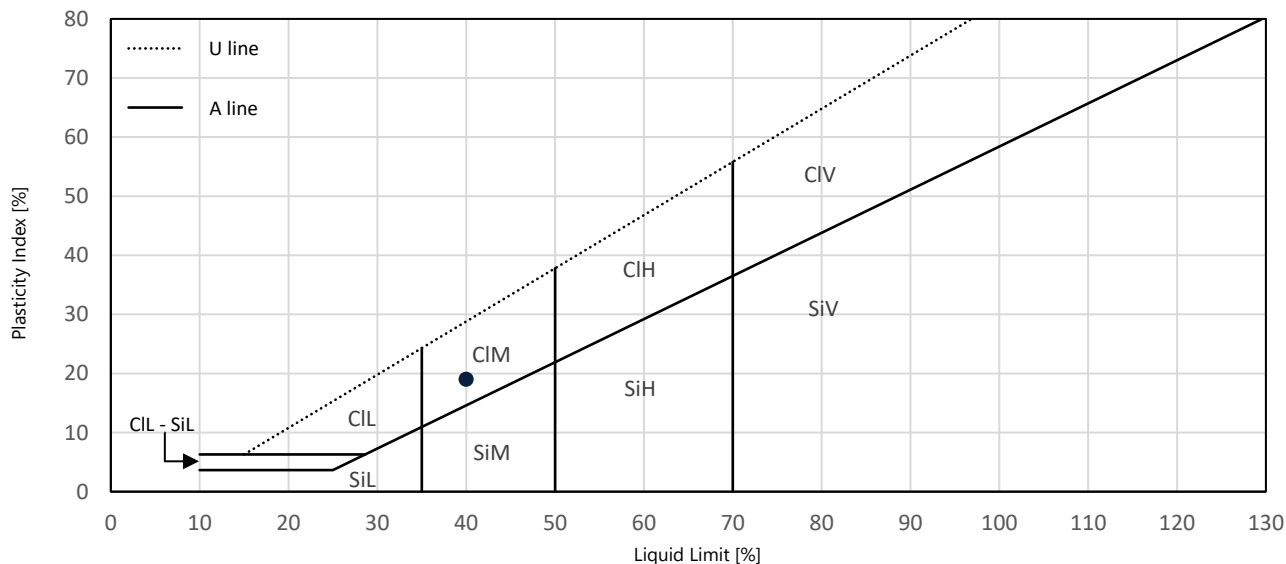
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.20
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters		
Method	Fall cone, 1 point.	
Fall Cone Used	80g/30° Cone	
Preparation	Tested in natural condition	
Mandatory Reporting Items		
As Received Water Content [%]	21.4	
Liquid Limit [%]	40	
Plastic Limit [%]	21	
Plasticity Index [%]	19	
% Passing 425 µm BS Sieve [%]	100	
Optional Reporting Items		
Liquidity Index	0.021	
Consistency Index	0.979	
Activity Index		
Water Content of Material <425 µm [%]	21.4	
Test Data		
Liquid Limit Penetration Depth [mm]	19.6	20.0
Liquid Limit Water Content [%]	40.4	40.0
Correlation Factor	1.004	

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	One point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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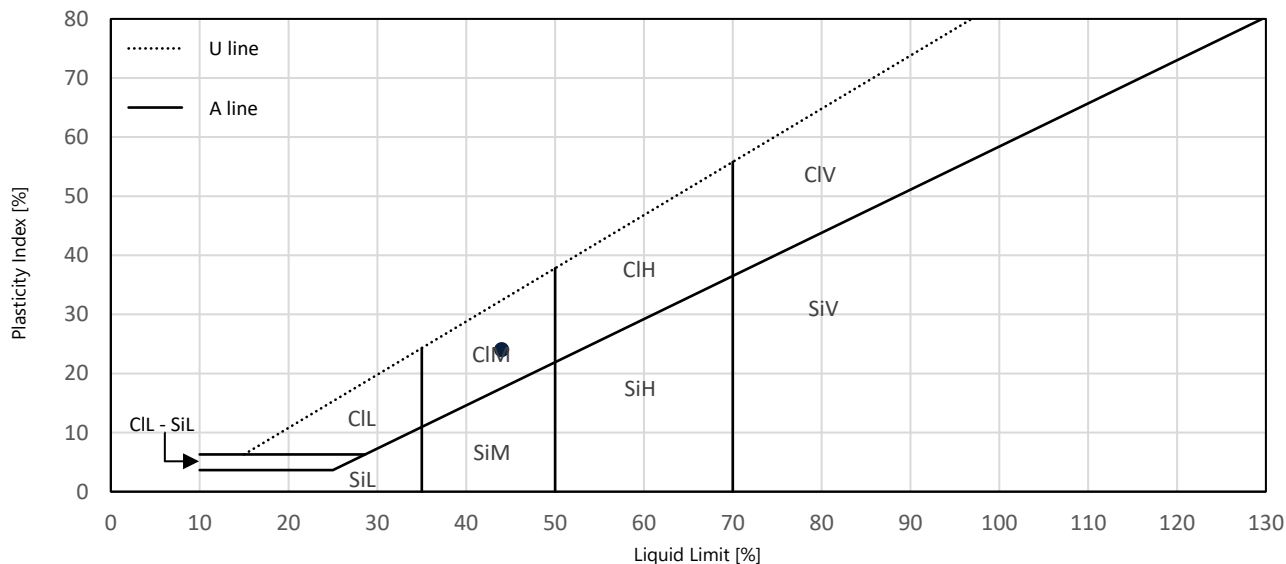
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.20
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Test Parameters		
Method	Fall cone, 1 point.	
Fall Cone Used	80g/30° Cone	
Preparation	Tested in natural condition	
Mandatory Reporting Items		
As Received Water Content [%]	26.4	
Liquid Limit [%]	44	
Plastic Limit [%]	20	
Plasticity Index [%]	24	
% Passing 425 µm BS Sieve [%]	100	
Optional Reporting Items		
Liquidity Index	0.265	
Consistency Index	0.735	
Activity Index		
Water Content of Material <425 µm [%]	26.4	
Test Data		
Liquid Limit Penetration Depth [mm]	19.5	19.4
Liquid Limit Water Content [%]	43.6	43.5
Correlation Factor	1.011	

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	One point liquid limit test.				

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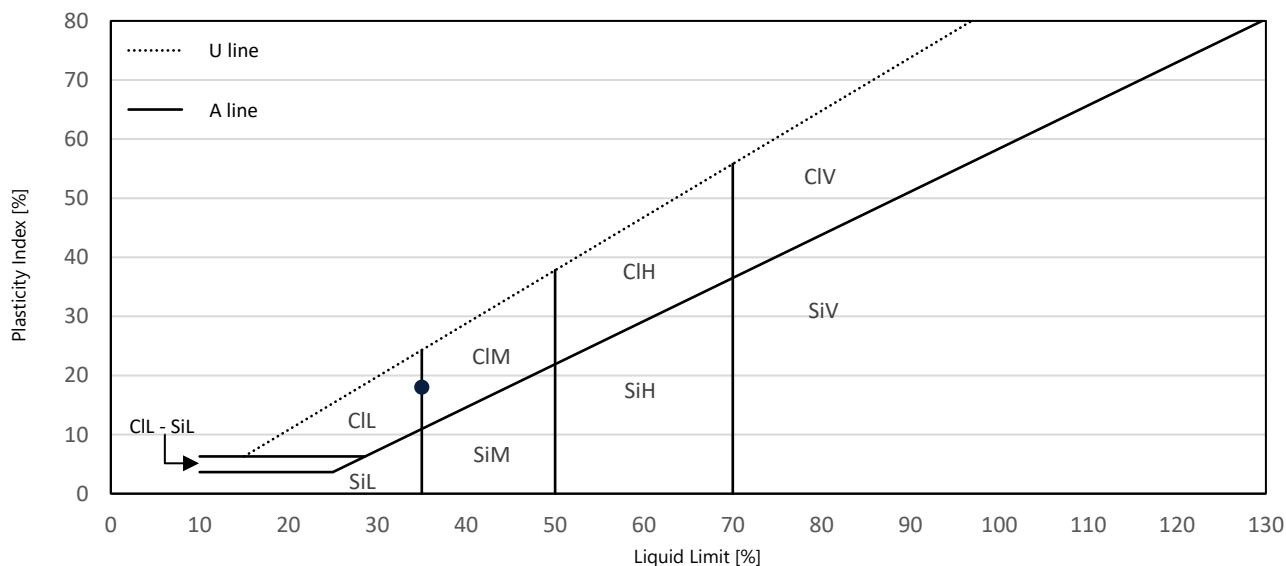
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	32.6
Liquid Limit [%]	35
Plastic Limit [%]	17
Plasticity Index [%]	18
% Passing 425 µm BS Sieve [%]	99
Optional Reporting Items	
Liquidity Index	0.878
Consistency Index	0.122
Activity Index	
Water Content of Material <425 µm [%]	32.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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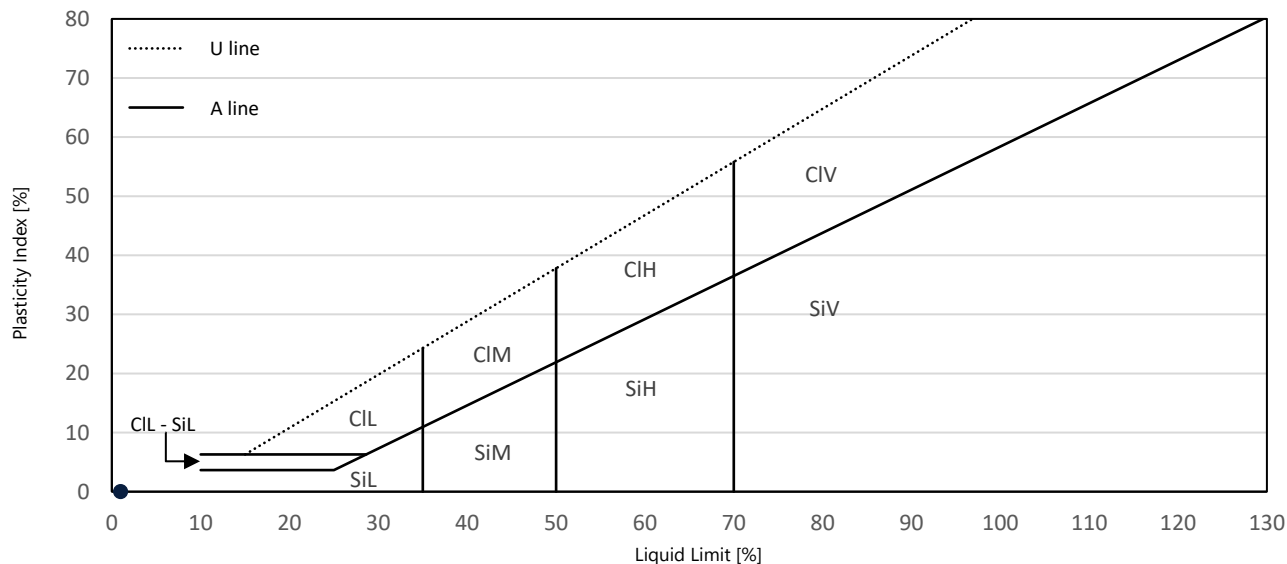
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Grey brown clayey sandy GRAVEL	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after washing to remove >425µm
Mandatory Reporting Items	
As Received Water Content [%]	14.5
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	29
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	49.5

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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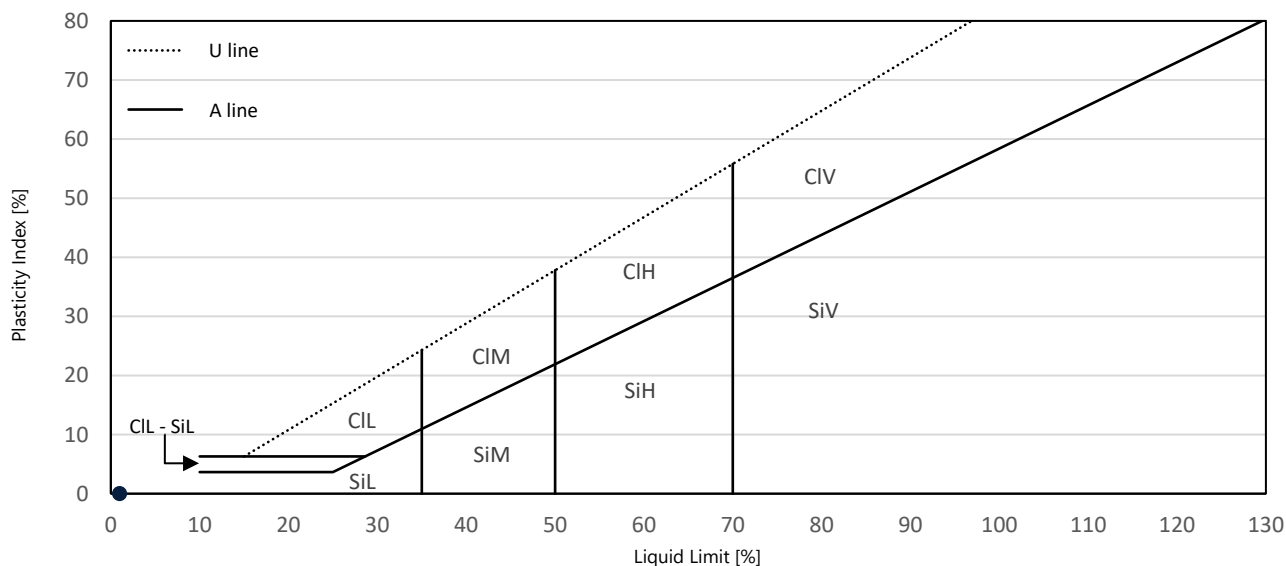
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	21.4
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	21.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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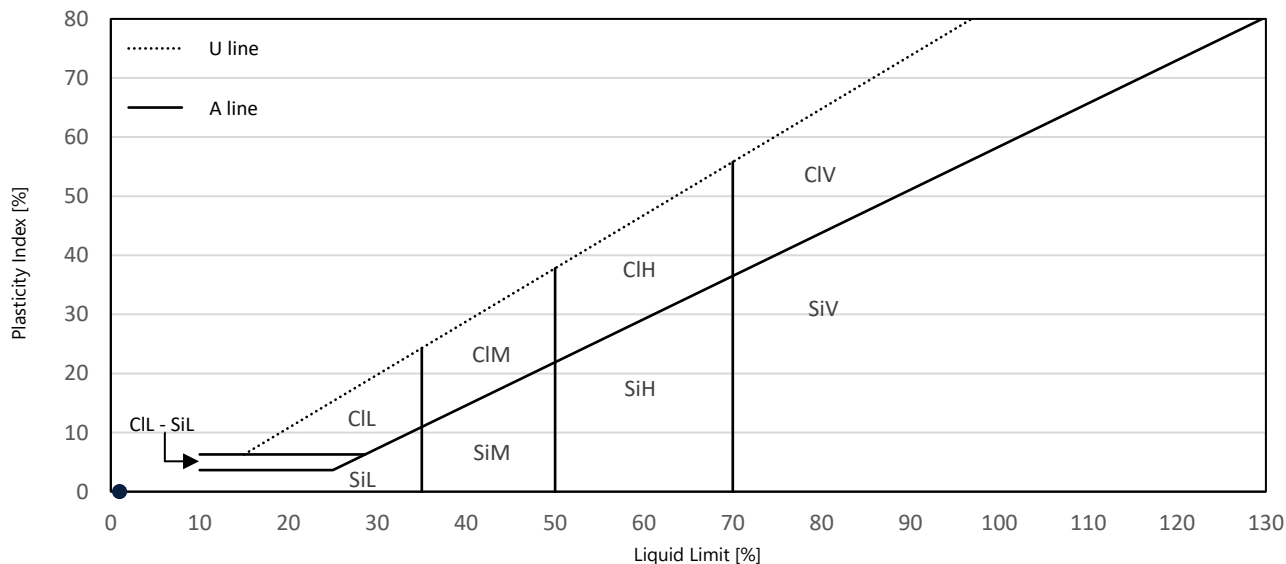
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown very silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	29.9
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	29.9

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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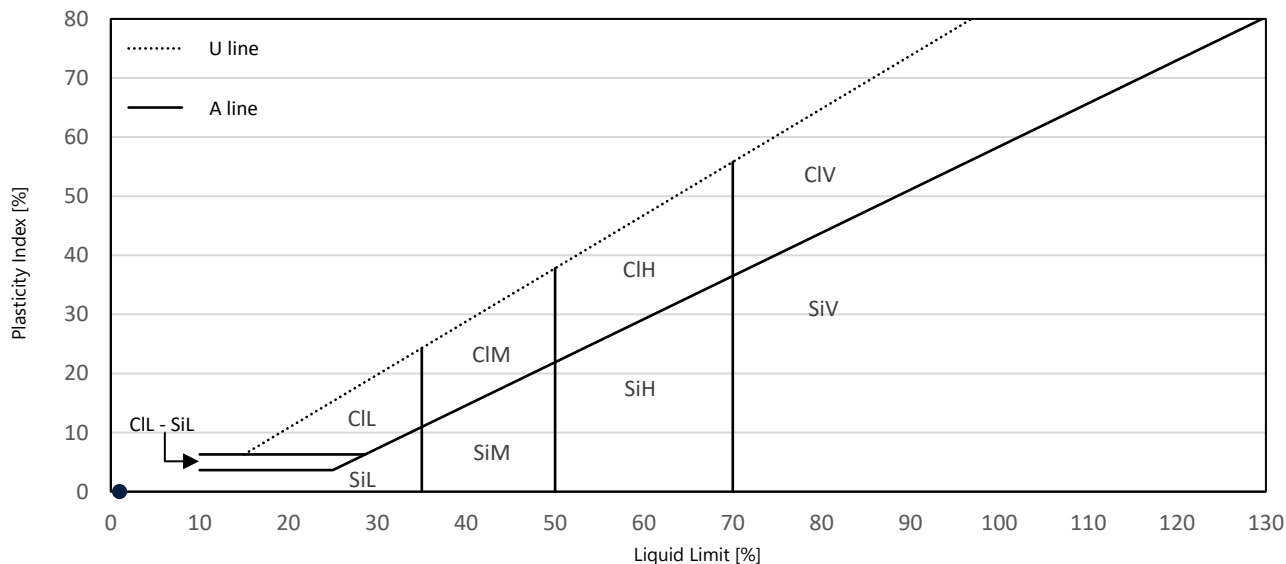
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.20
Specimen Description	Brown silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	22.8
Liquid Limit [%]	
Plastic Limit [%]	NP
Plasticity Index [%]	
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	
Consistency Index	
Activity Index	
Water Content of Material <425 µm [%]	22.8

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
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Remarks:	Four point liquid limit test.				

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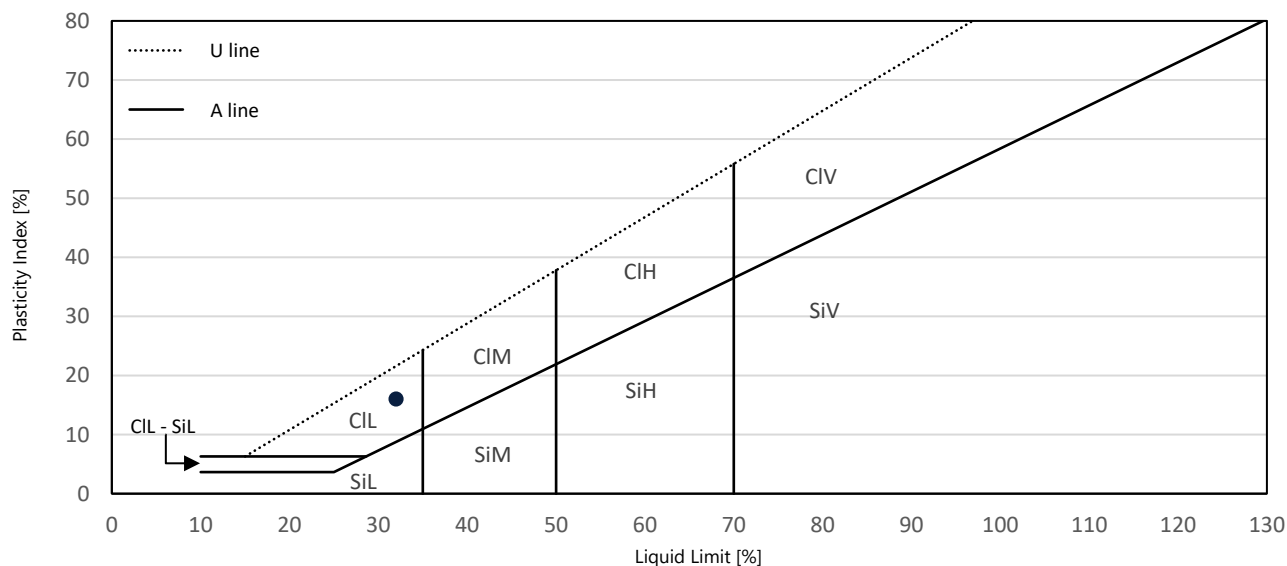
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	29.3
Liquid Limit [%]	32
Plastic Limit [%]	16
Plasticity Index [%]	16
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	0.830
Consistency Index	0.170
Activity Index	
Water Content of Material <425 µm [%]	29.3

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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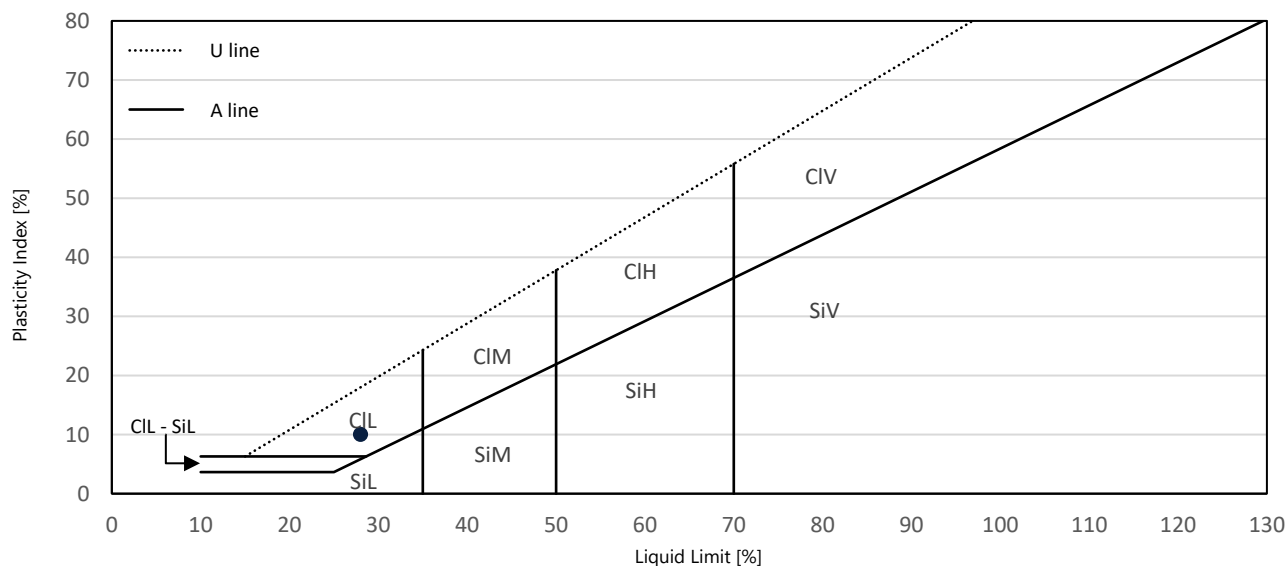
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.30
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425um removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	26.8
Liquid Limit [%]	28
Plastic Limit [%]	18
Plasticity Index [%]	10
% Passing 425 µm BS Sieve [%]	95
Optional Reporting Items	
Liquidity Index	1.022
Consistency Index	-0.022
Activity Index	
Water Content of Material <425 µm [%]	28.2

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

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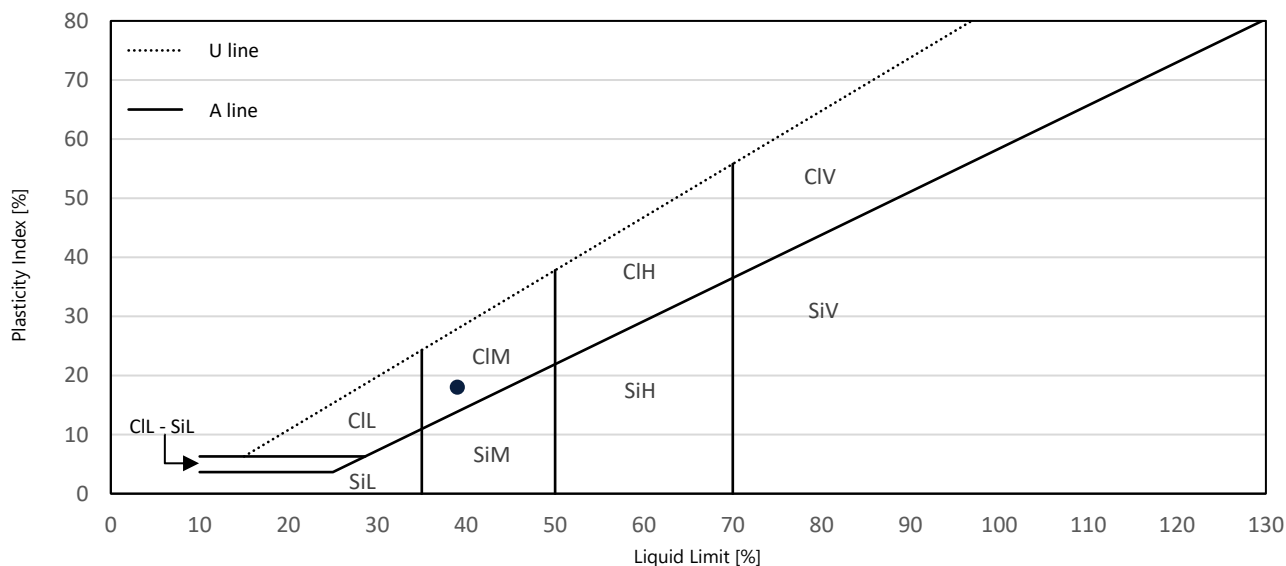
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.60
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested in natural condition
Mandatory Reporting Items	
As Received Water Content [%]	20.7
Liquid Limit [%]	39
Plastic Limit [%]	21
Plasticity Index [%]	18
% Passing 425 µm BS Sieve [%]	100
Optional Reporting Items	
Liquidity Index	-0.016
Consistency Index	1.016
Activity Index	
Water Content of Material <425 µm [%]	20.7

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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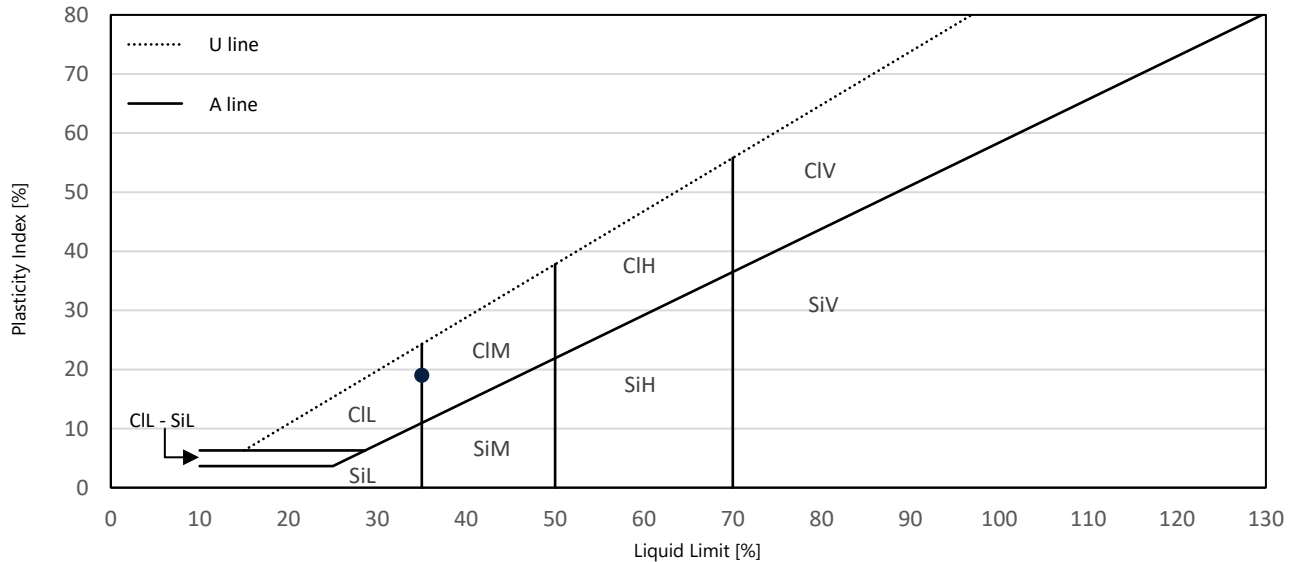
Determination of Liquid and Plastic Limits



1483

BS EN ISO 17892-12:2018 / BS EN ISO 17892-1:2014

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.60
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41



Test Parameters	
Method	Fall cone, 4 point. Increasing water content.
Fall Cone Used	80g/30° Cone
Preparation	Tested after >425µm removed by hand
Mandatory Reporting Items	
As Received Water Content [%]	24.2
Liquid Limit [%]	35
Plastic Limit [%]	16
Plasticity Index [%]	19
% Passing 425 µm BS Sieve [%]	85
Optional Reporting Items	
Liquidity Index	0.654
Consistency Index	0.346
Activity Index	
Water Content of Material <425 µm [%]	28.4

Terms used on Plasticity Chart based on BS EN ISO 14688-2 : 2018

CIL = Low Plasticity Clay CIM = Medium Plasticity Clay CIH = High Plasticity Clay CIV = Very High Plasticity Clay
 SiL = Low Plasticity Silt SiM = Medium Plasticity Silt SiH = High Plasticity Silt SiV = Very High Plasticity Silt

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:	Four point liquid limit test.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

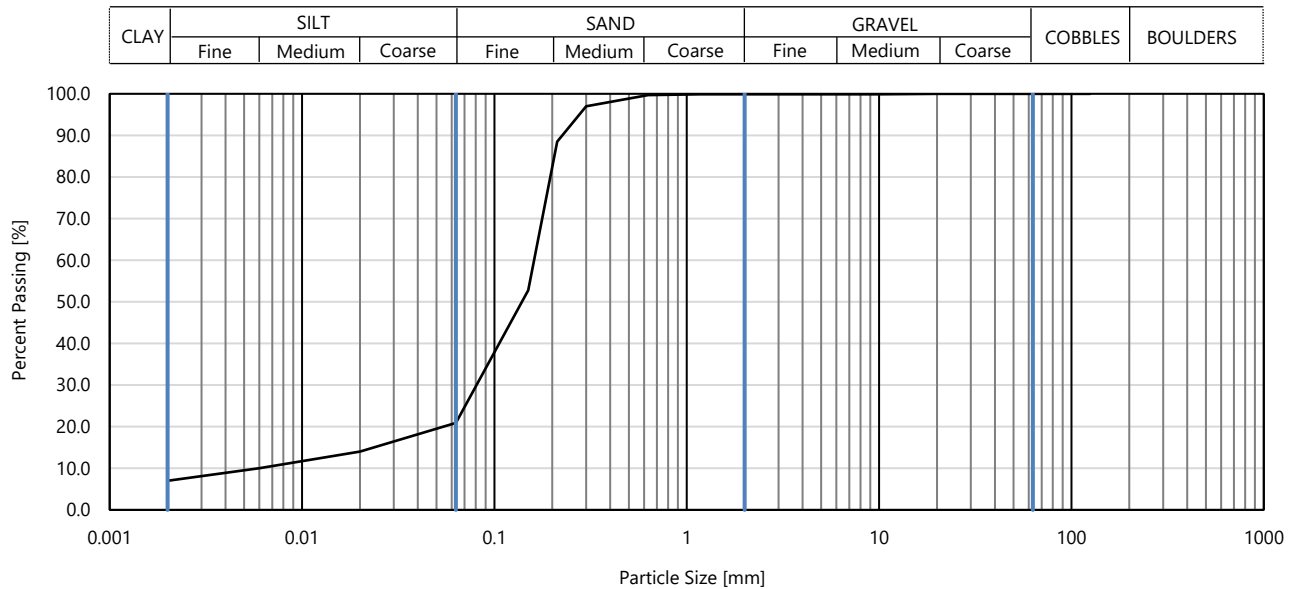
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	10
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	89		
0.150	53		
0.0630	21		

Dry Mass of Sample [g]	953
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	79.0
Silt	14.0
Clay	6.9

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.161
D30 [mm]	0.0807
D10 [mm]	0.00671
Coefficient of Uniformity	24
Coefficient of Curvature	6

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

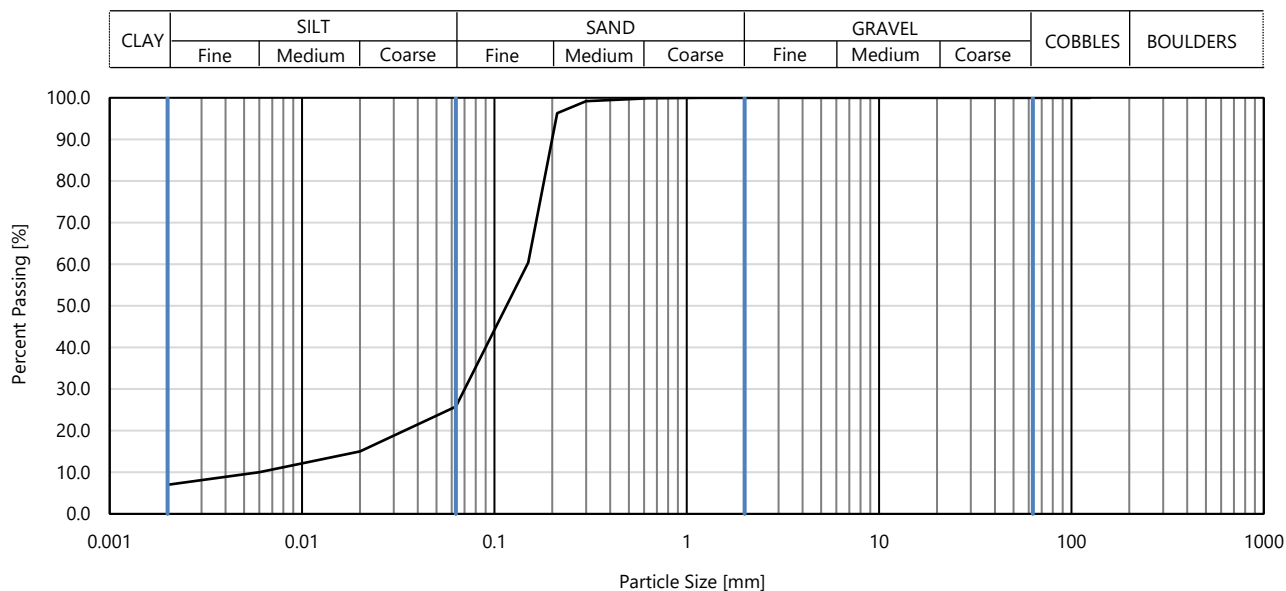
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	15
90.0	100	0.00600	10
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	96		
0.150	60		
0.0630	26		

Dry Mass of Sample [g]	686
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	74.2
Silt	18.7
Clay	7.1

Grading Analysis	
D100 [mm]	1.18
D60 [mm]	0.149
D30 [mm]	0.07
D10 [mm]	0.00609
Coefficient of Uniformity	24
Coefficient of Curvature	5.4

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

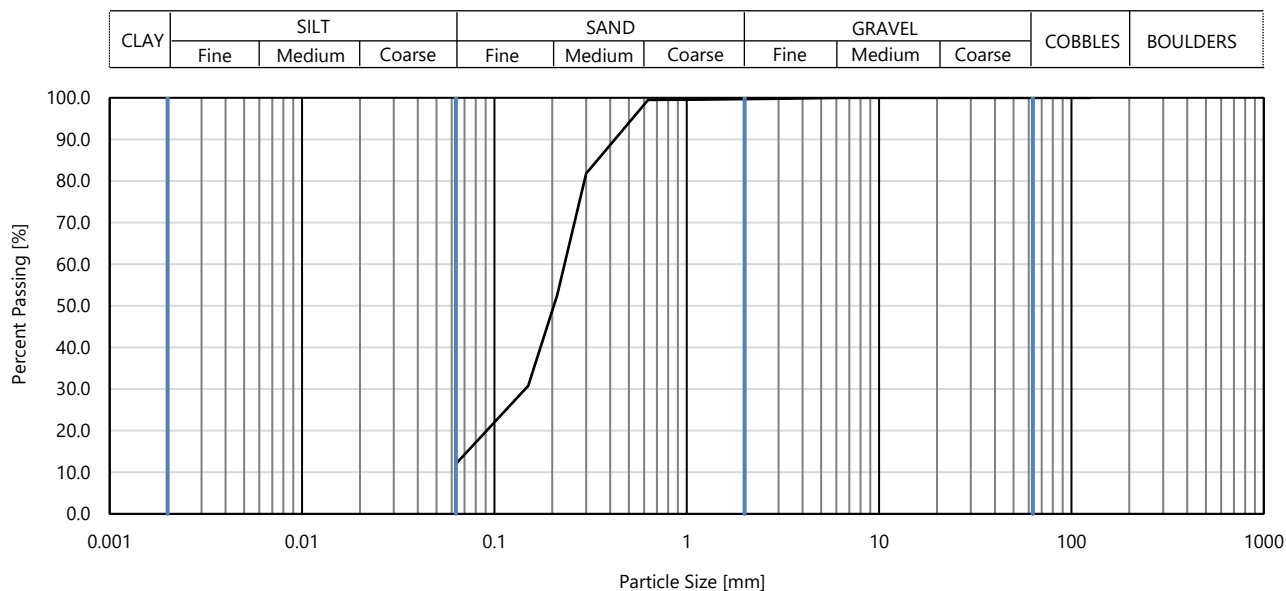
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	82		
0.212	53		
0.150	31		
0.0630	12		

Dry Mass of Sample [g]	960
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	87.7
Fines <0.063mm	12.0

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.232
D30 [mm]	0.144
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

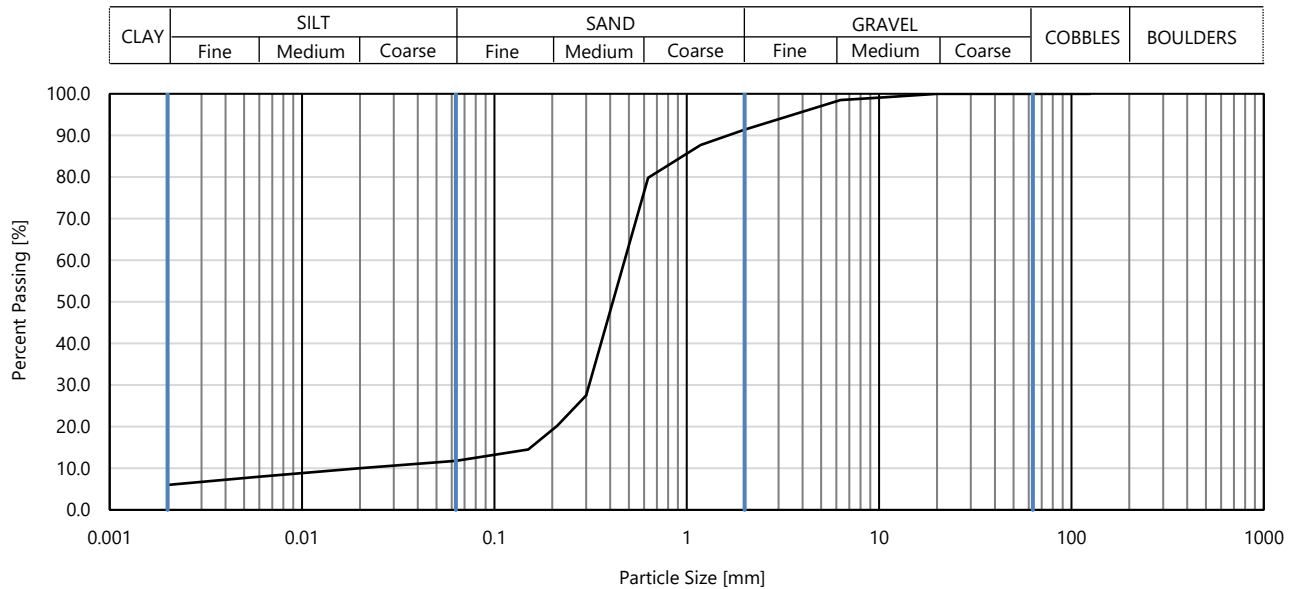
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	10
90.0	100	0.00600	8
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	99		
3.35	95		
2.00	91		
1.18	88		
0.630	80		
0.300	28		
0.212	20		
0.150	15		
0.0630	12		

Dry Mass of Sample [g]	1981
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	8.6
Sand	79.6
Silt	5.4
Clay	6.4

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.476
D30 [mm]	0.311
D10 [mm]	0.0185
Coefficient of Uniformity	26
Coefficient of Curvature	11

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

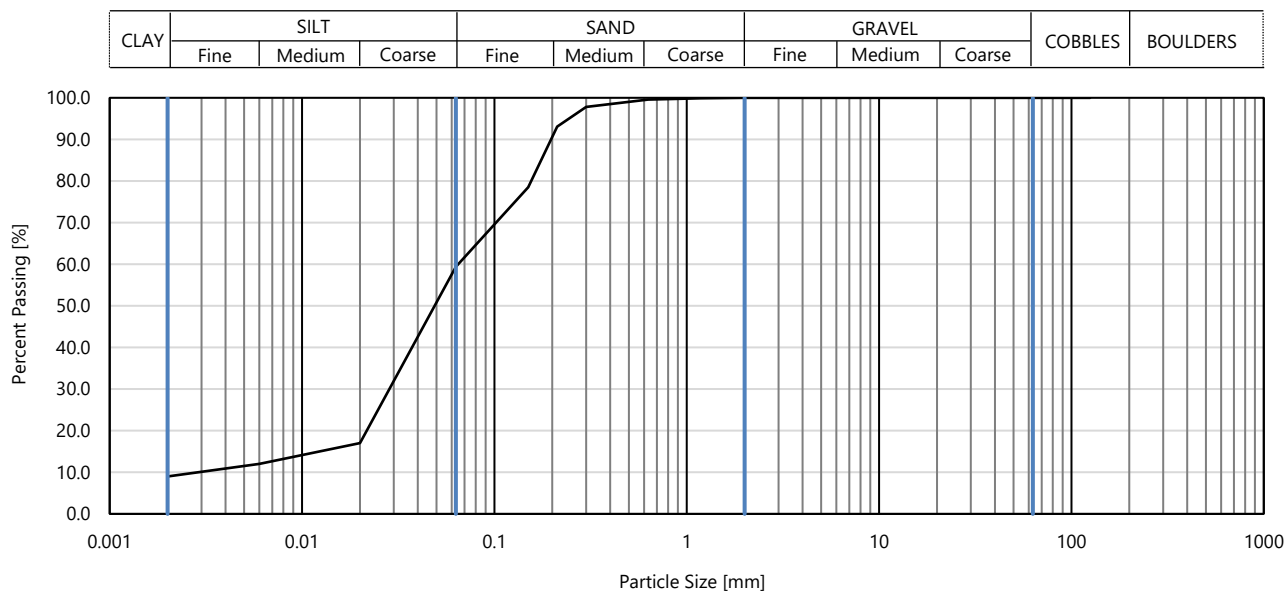
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown sandy SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	17
90.0	100	0.00600	12
75.0	100	0.00200	9
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	93		
0.150	79		
0.0630	59		

Dry Mass of Sample [g]	368
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	40.6
Silt	50.0
Clay	9.4

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0648
D30 [mm]	0.0287
D10 [mm]	0.00263
Coefficient of Uniformity	25
Coefficient of Curvature	4.8

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

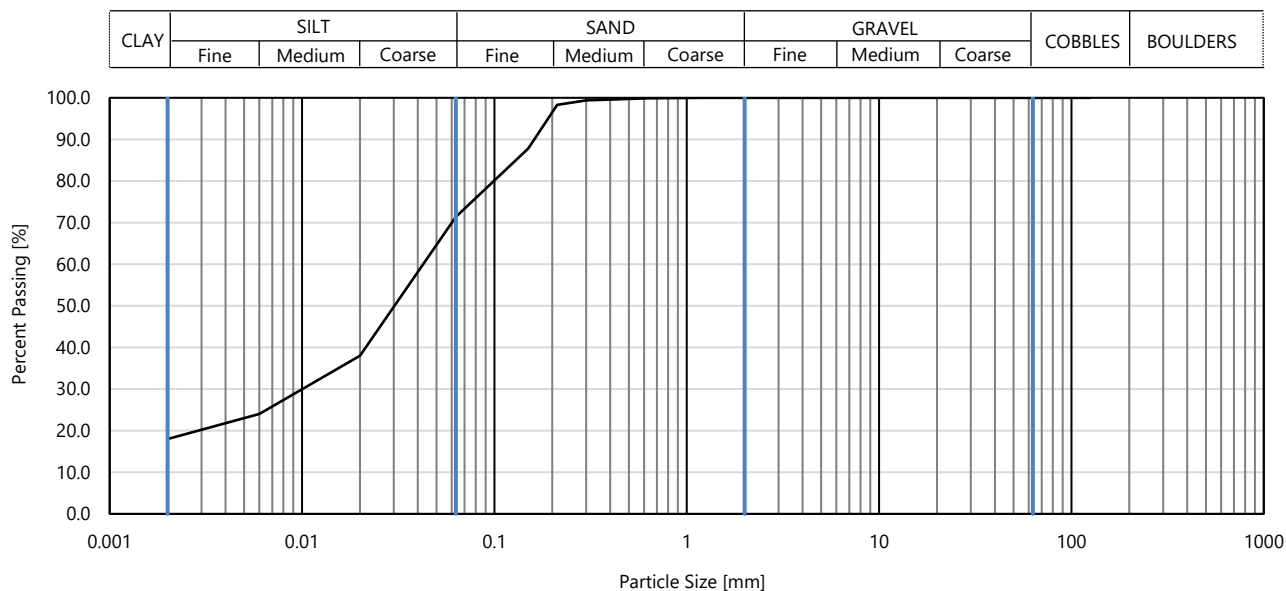
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown slightly sandy SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	38
90.0	100	0.00600	24
75.0	100	0.00200	18
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	98		
0.150	88		
0.0630	71		

Dry Mass of Sample [g]	303
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	28.6
Silt	53.6
Clay	17.8

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.0428
D30 [mm]	0.0101
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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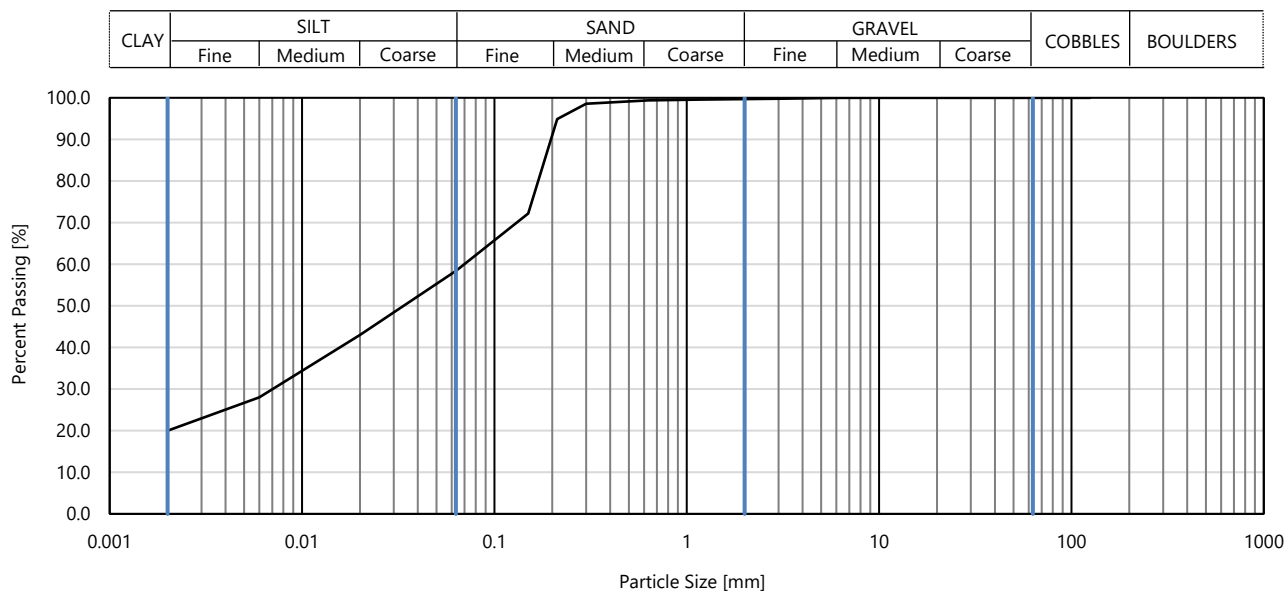
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	43
90.0	100	0.00600	28
75.0	100	0.00200	20
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	99		
0.212	95		
0.150	72		
0.0630	58		

Dry Mass of Sample [g]	366
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	41.3
Silt	38.8
Clay	19.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0696
D30 [mm]	0.00725
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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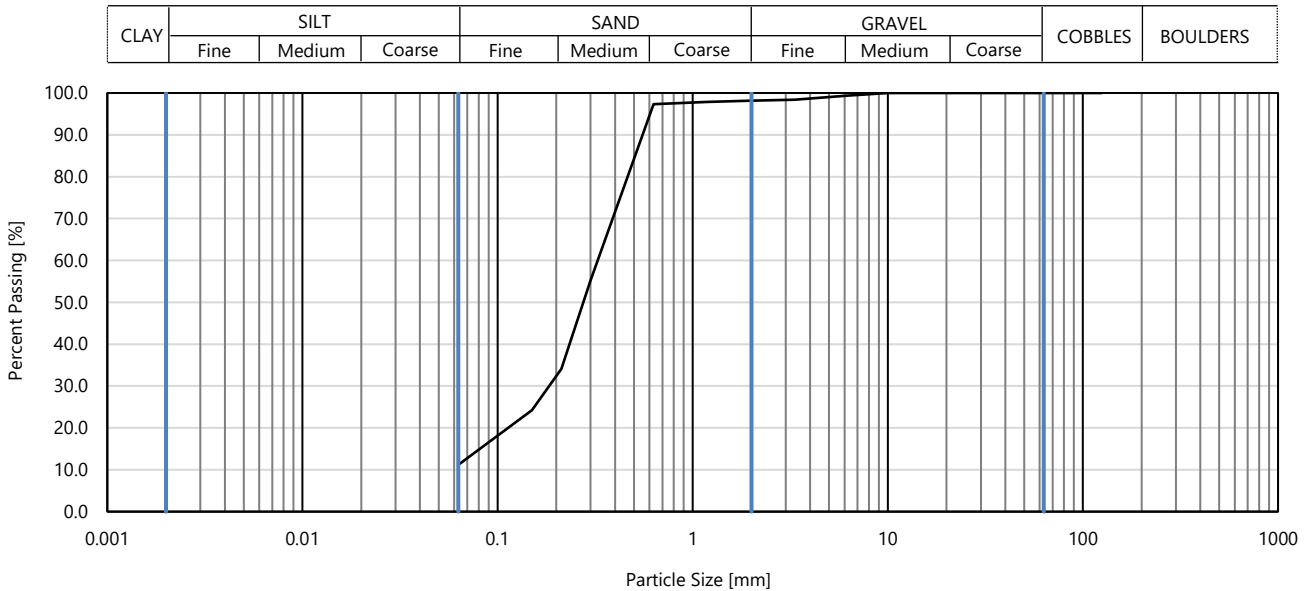
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	99		
3.35	98		
2.00	98		
1.18	98		
0.630	97		
0.300	55		
0.212	34		
0.150	24		
0.0630	11		

Dry Mass of Sample [g]	323
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.8
Sand	86.9
Fines <0.063mm	11.2

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.326
D30 [mm]	0.184
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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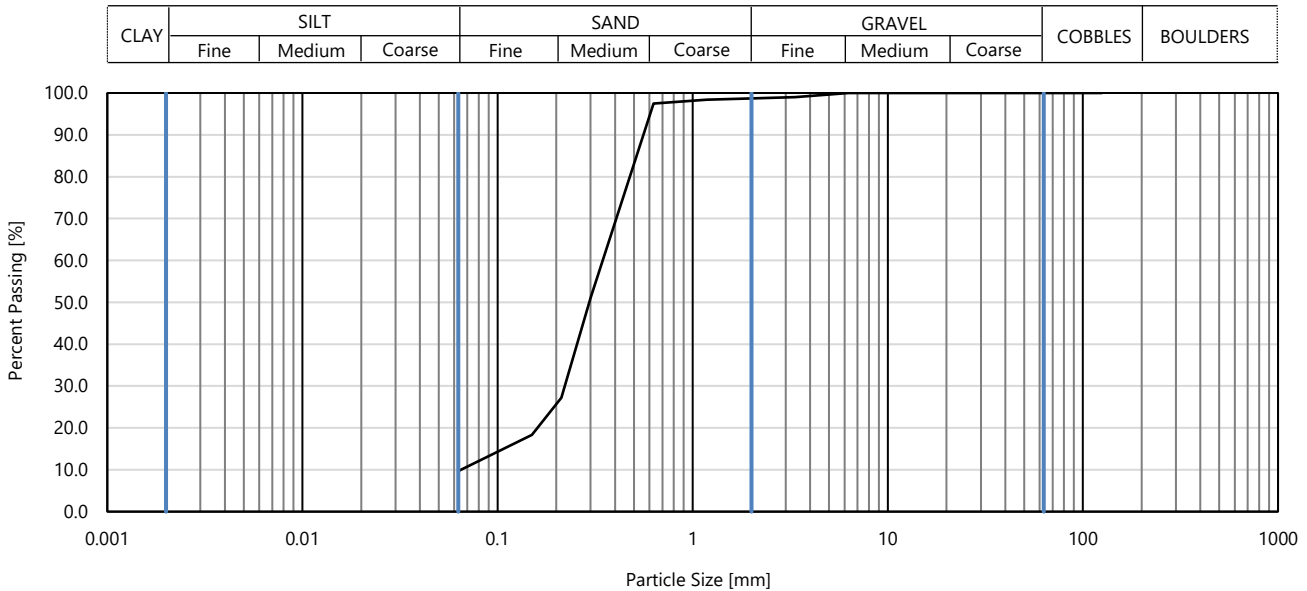
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	98		
0.630	98		
0.300	51		
0.212	27		
0.150	18		
0.0630	10		

Dry Mass of Sample [g]	200
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.3
Sand	89.0
Fines <0.063mm	9.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.346
D30 [mm]	0.221
D10 [mm]	0.0647
Coefficient of Uniformity	5.4
Coefficient of Curvature	2.2

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

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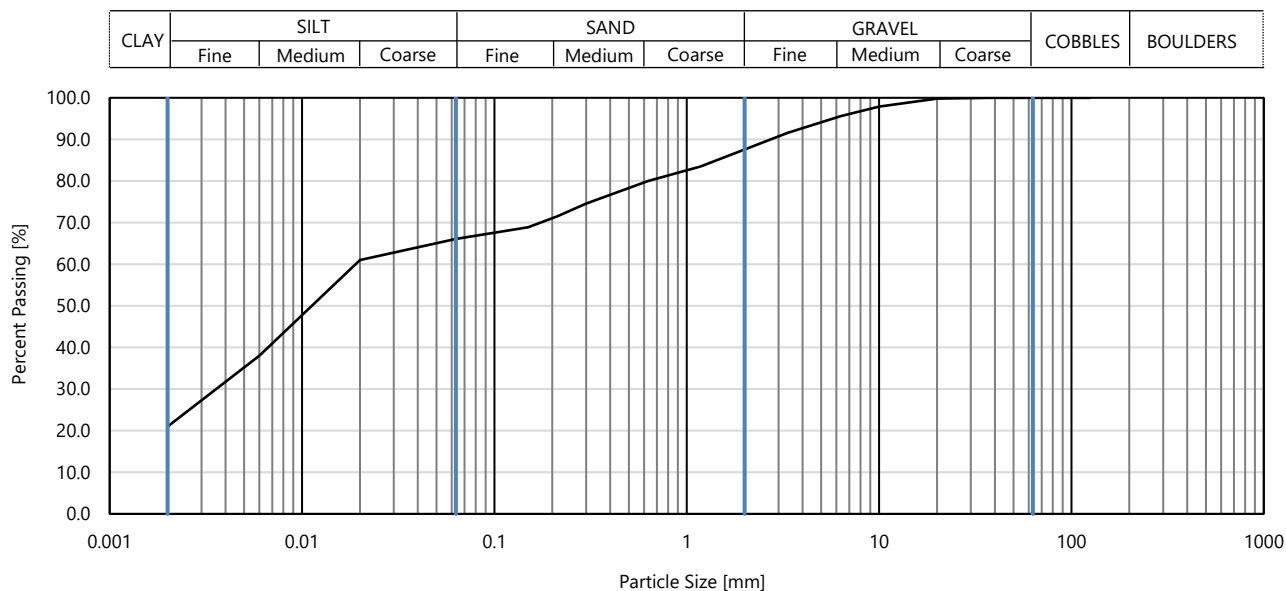
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	61
90.0	100	0.00600	38
75.0	100	0.00200	21
63.0	100		
37.5	100		
20.0	100		
10.0	98		
6.30	96		
3.35	92		
2.00	88		
1.18	84		
0.630	80		
0.300	75		
0.212	72		
0.150	69		
0.0630	66		

Dry Mass of Sample [g]	7387
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	12.4
Sand	21.5
Silt	45.4
Clay	20.7

Grading Analysis	
D100 [mm]	37.5
D60 [mm]	0.0187
D30 [mm]	0.00357
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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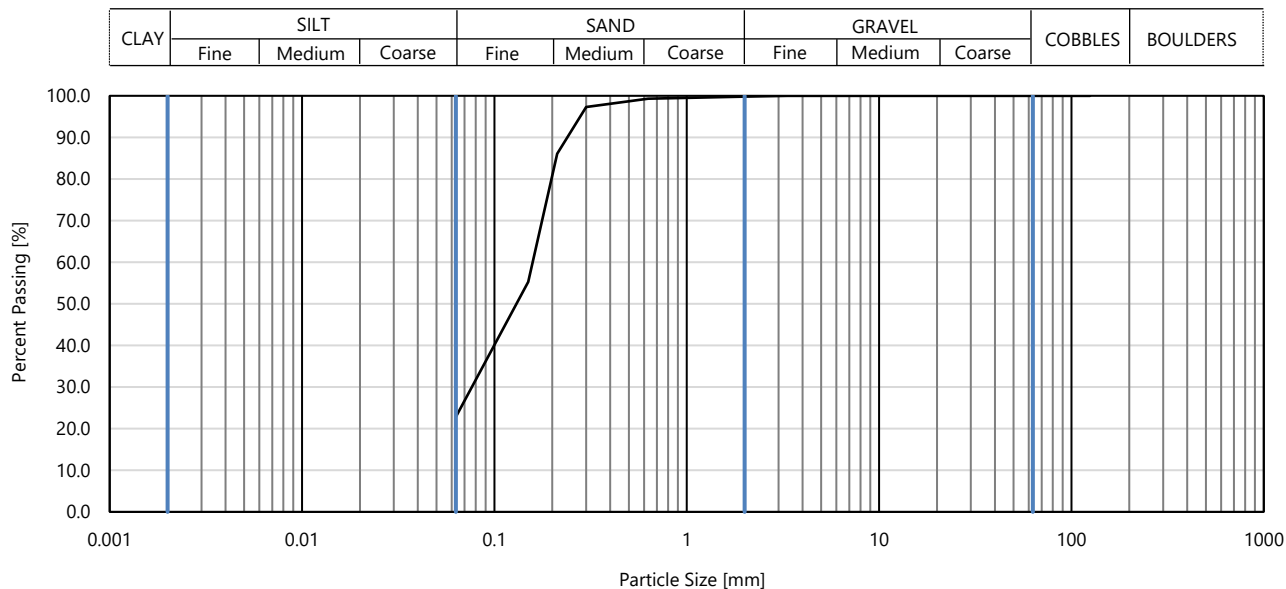
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.90
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	97		
0.212	86		
0.150	55		
0.0630	23		

Dry Mass of Sample [g]	984
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	77.0
Fines <0.063mm	22.8

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.158
D30 [mm]	0.0763
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

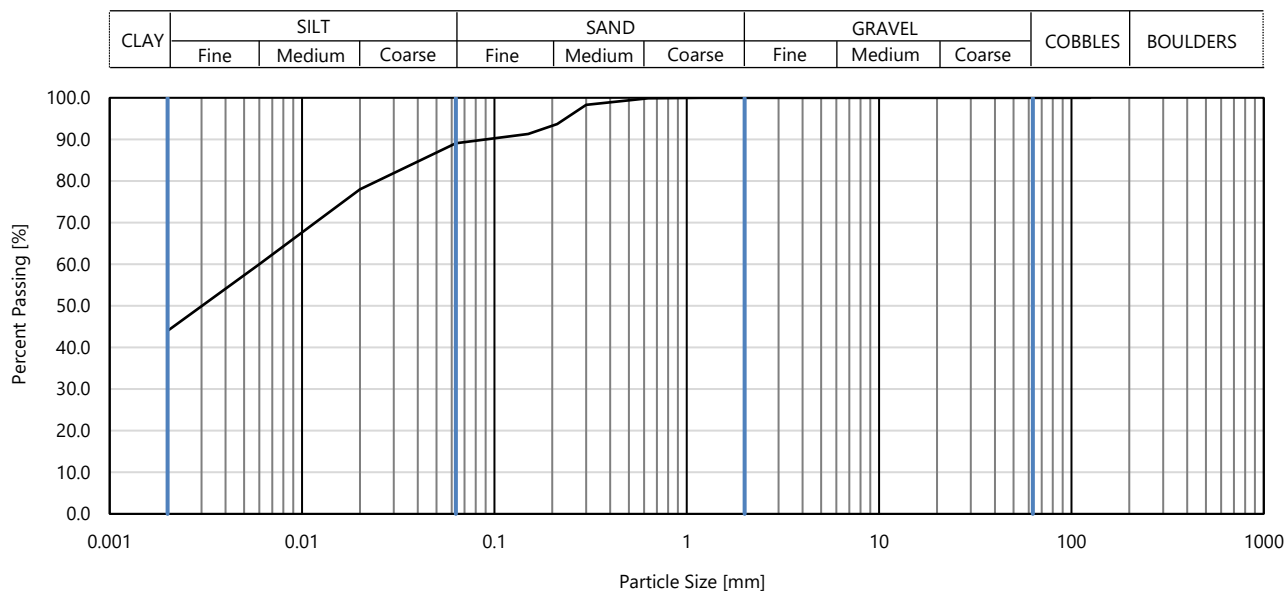
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	78
90.0	100	0.00600	60
75.0	100	0.00200	44
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	94		
0.150	91		
0.0630	89		

Dry Mass of Sample [g]	725
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	10.8
Silt	45.1
Clay	44.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.00599
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

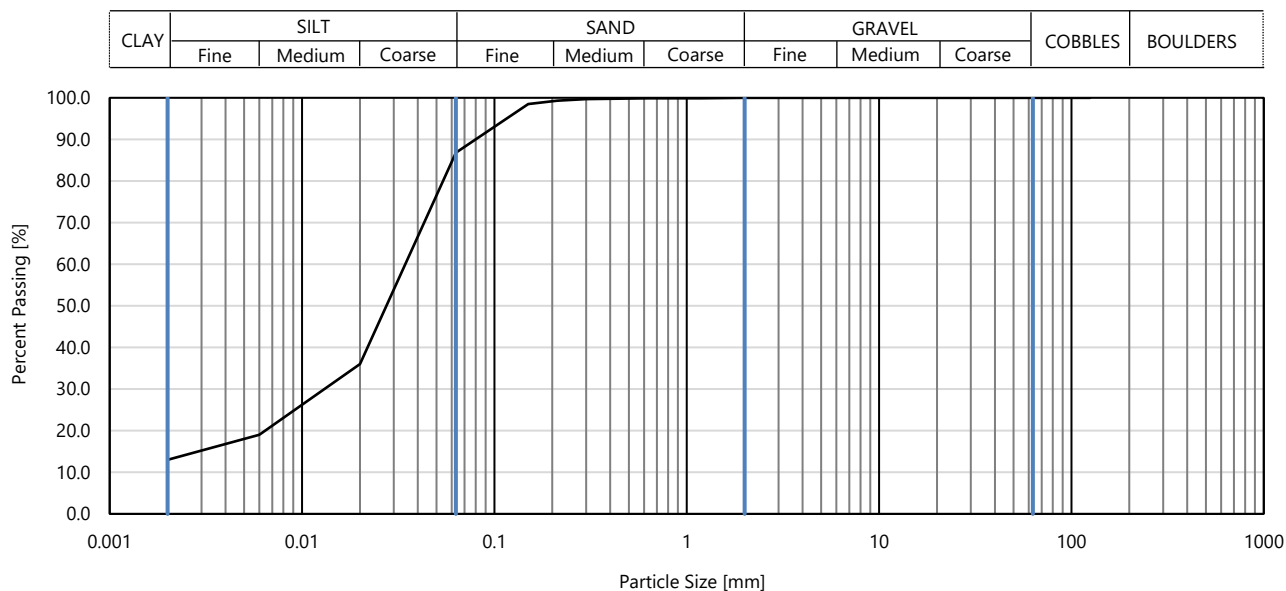
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly sandy SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	36
90.0	100	0.00600	19
75.0	100	0.00200	13
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	99		
0.0630	87		

Dry Mass of Sample [g]	187
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	13.2
Silt	73.7
Clay	13.1

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0343
D30 [mm]	0.0128
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

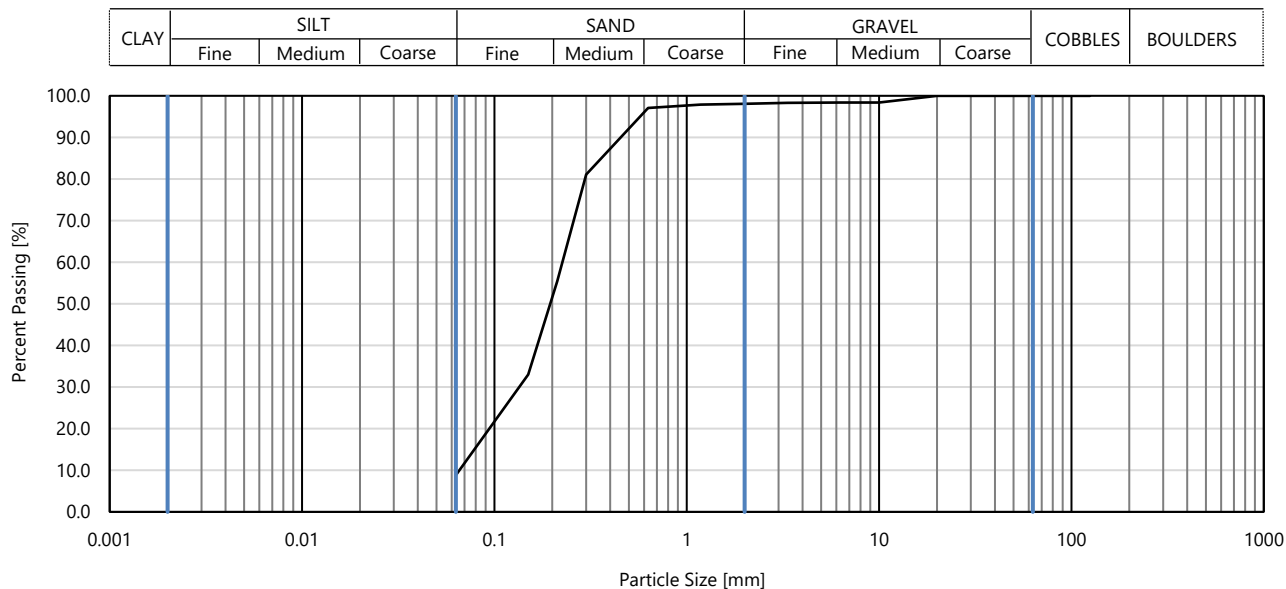
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	98		
6.30	98		
3.35	98		
2.00	98		
1.18	98		
0.630	97		
0.300	81		
0.212	55		
0.150	33		
0.0630	9		

Dry Mass of Sample [g]	279
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.9
Sand	89.3
Fines <0.063mm	8.8

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.226
D30 [mm]	0.135
D10 [mm]	0.0658
Coefficient of Uniformity	3.4
Coefficient of Curvature	1.2

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

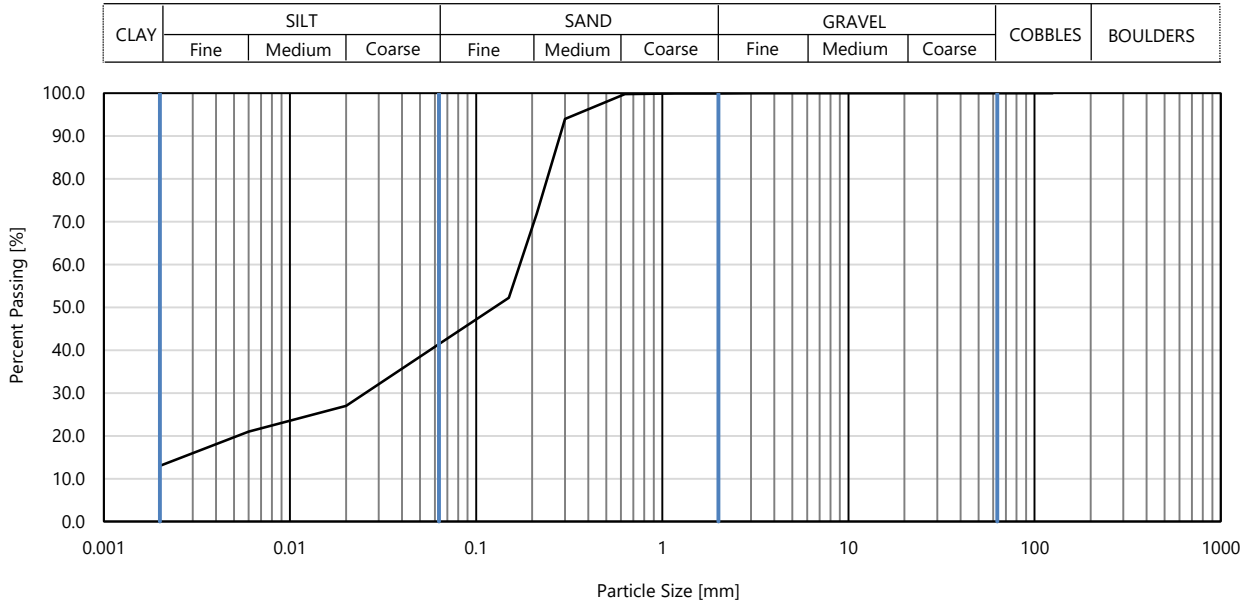
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	21



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	27
90.0	100	0.00600	21
75.0	100	0.00200	13
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	94		
0.212	72		
0.150	52		
0.0630	41		

Dry Mass of Sample [g]	557
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	58.5
Silt	28.8
Clay	12.6

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.172
D30 [mm]	0.0254
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

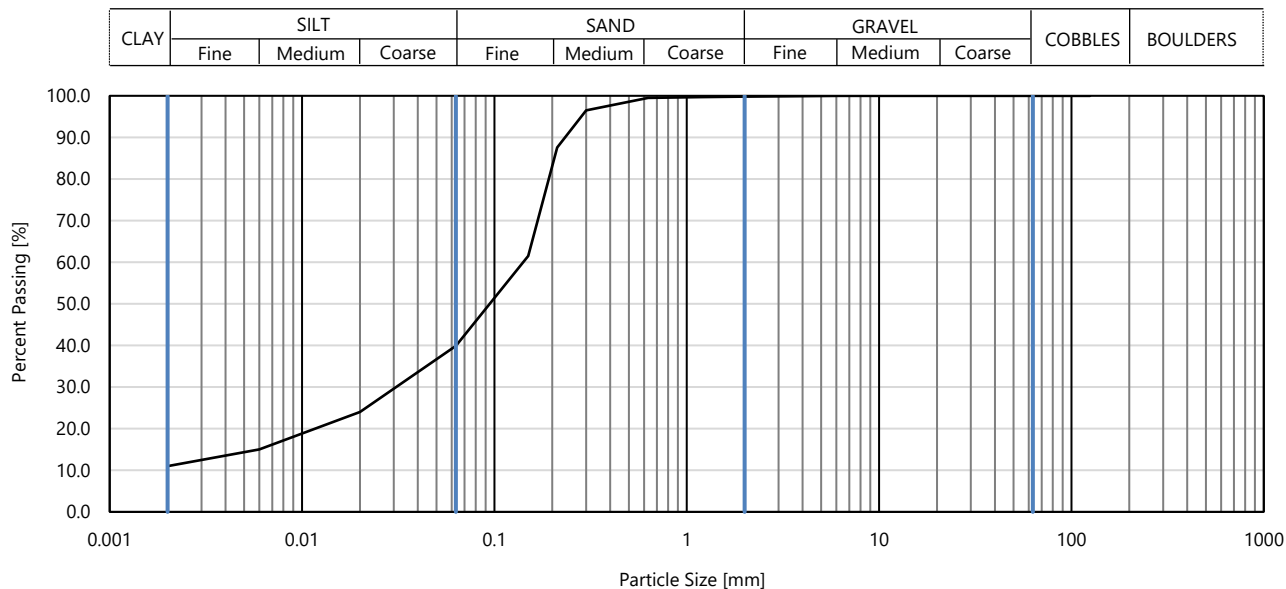
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	24
90.0	100	0.00600	15
75.0	100	0.00200	11
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	88		
0.150	62		
0.0630	40		

Dry Mass of Sample [g]	867
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	59.9
Silt	29.0
Clay	10.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.141
D30 [mm]	0.0312
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

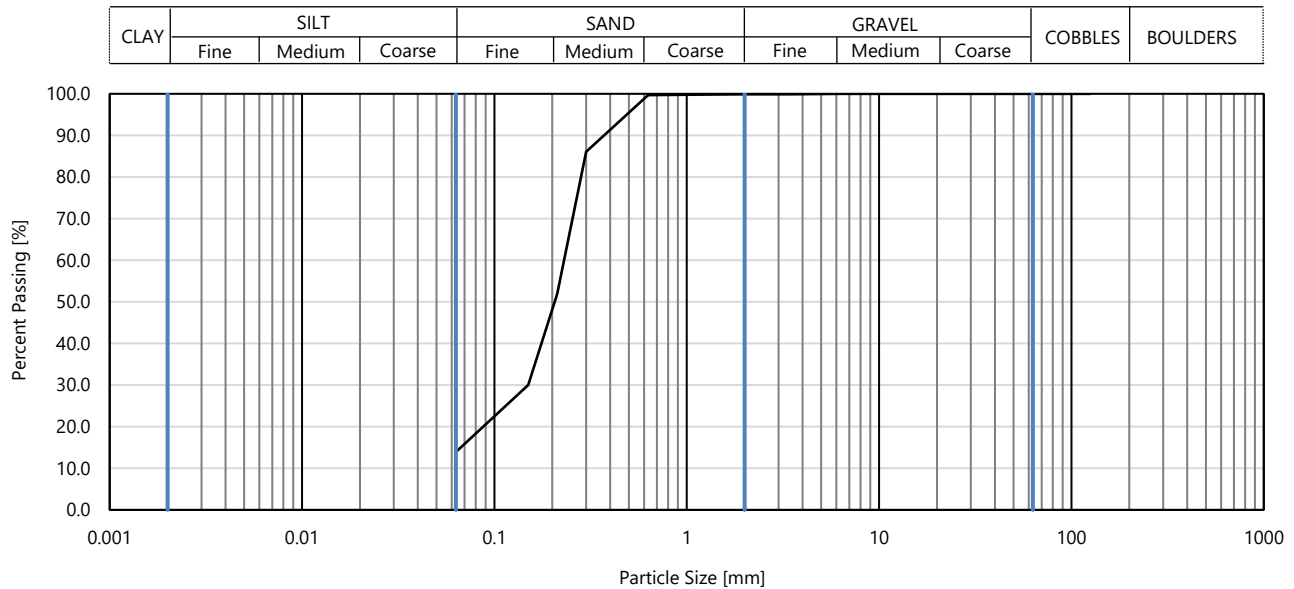
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	86		
0.212	52		
0.150	30		
0.0630	14		

Dry Mass of Sample [g]	1049
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	86.0
Fines <0.063mm	13.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.23
D30 [mm]	0.15
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

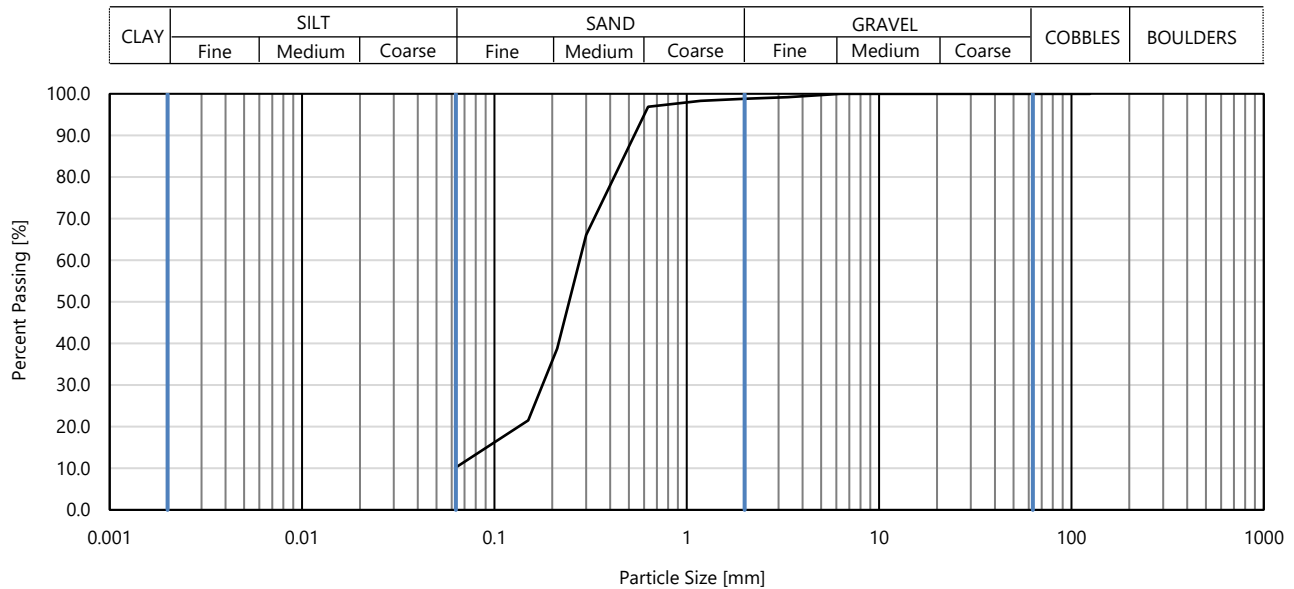
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	42



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	98		
0.630	97		
0.300	66		
0.212	39		
0.150	22		
0.0630	10		

Dry Mass of Sample [g]	1259
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.2
Sand	88.5
Fines <0.063mm	10.2

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.278
D30 [mm]	0.178
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

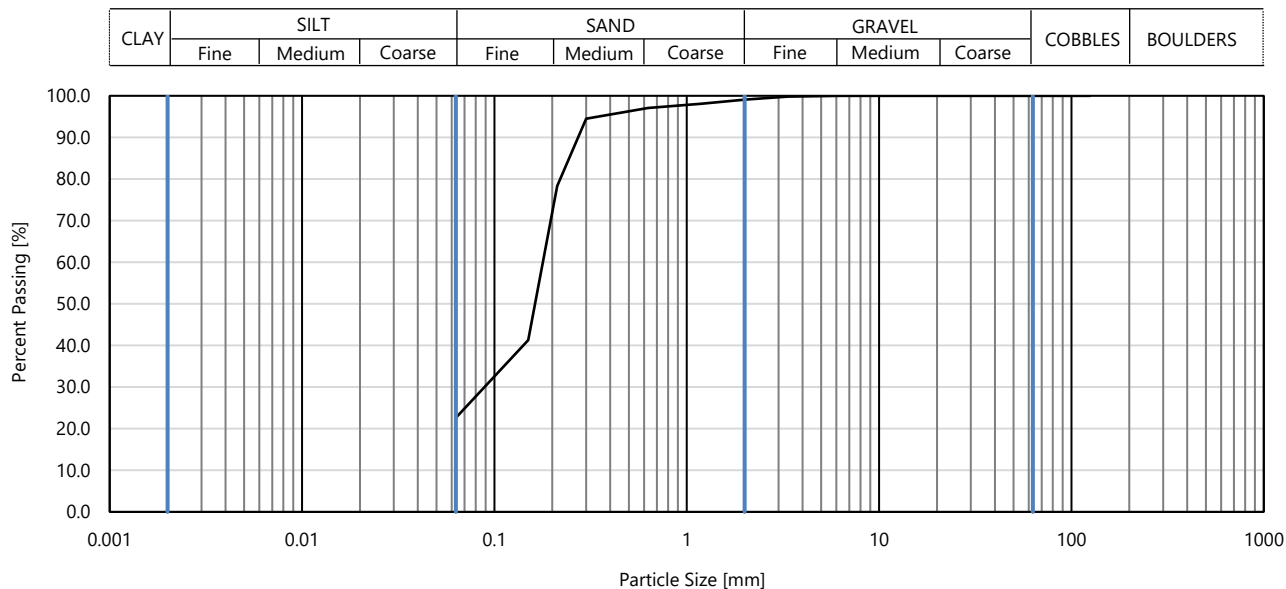
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.50
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	98		
0.630	97		
0.300	95		
0.212	78		
0.150	41		
0.0630	23		

Dry Mass of Sample [g]	1303
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.9
Sand	76.5
Fines <0.063mm	22.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.179
D30 [mm]	0.0888
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

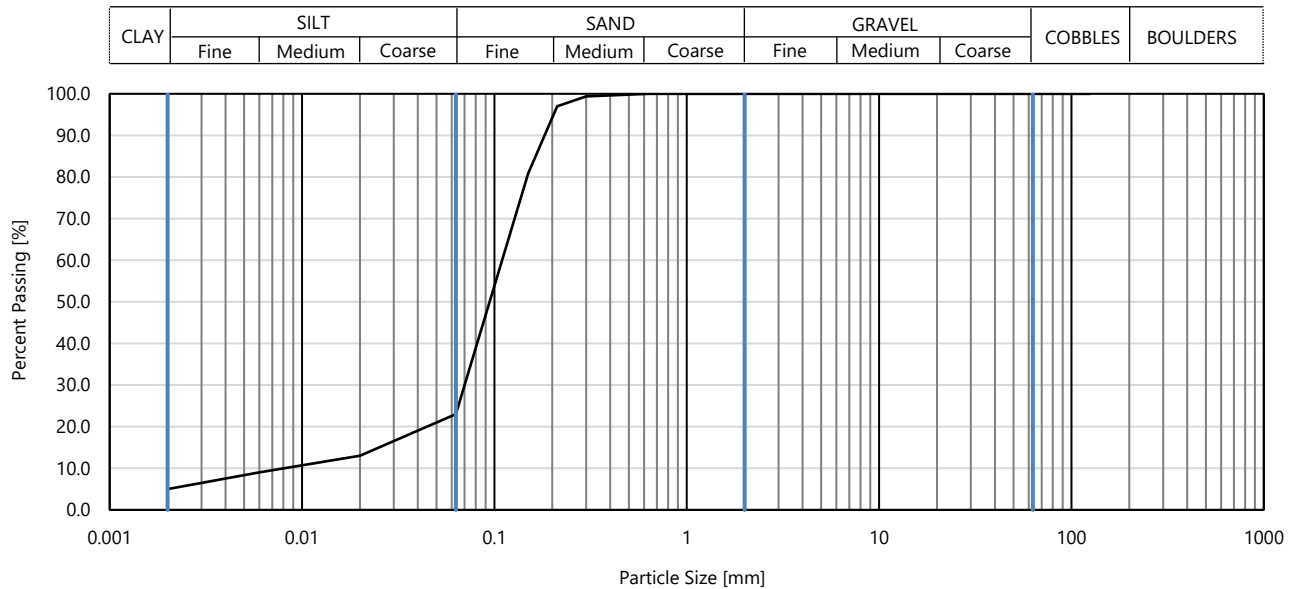
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	13
90.0	100	0.00600	9
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	97		
0.150	81		
0.0630	23		

Dry Mass of Sample [g]	972
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	77.0
Silt	17.6
Clay	5.4

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.11
D30 [mm]	0.07
D10 [mm]	0.00772
Coefficient of Uniformity	14
Coefficient of Curvature	5.8

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

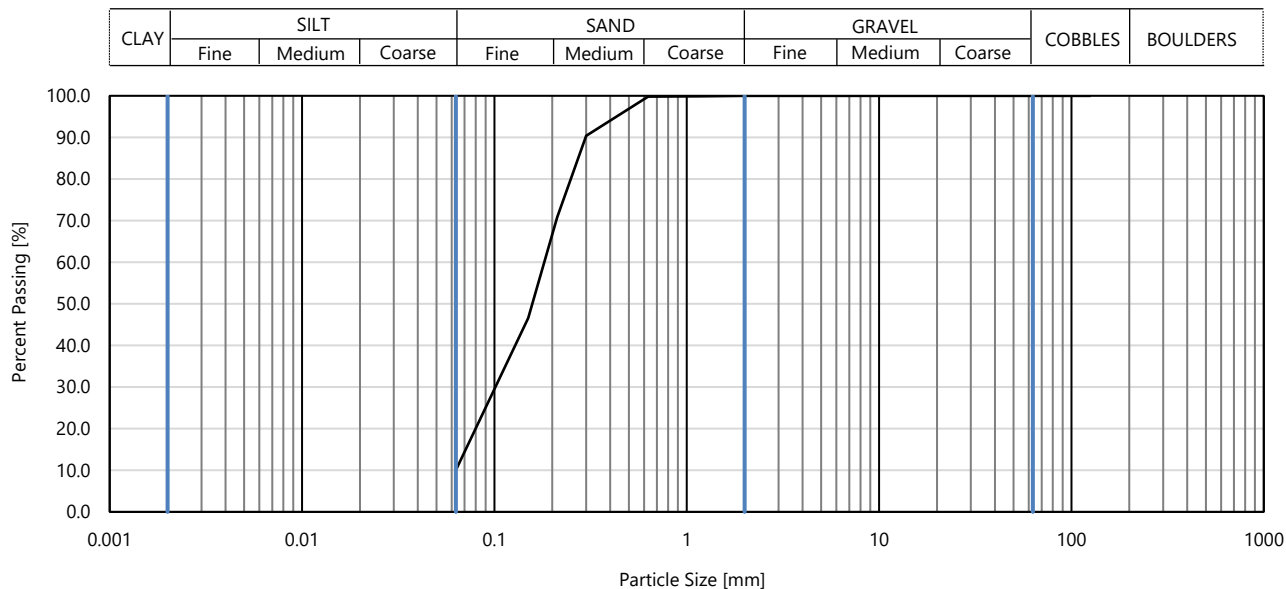
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	90		
0.212	71		
0.150	47		
0.0630	10		

Dry Mass of Sample [g]	1009
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	90.0
Fines <0.063mm	10.0

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.182
D30 [mm]	0.101
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

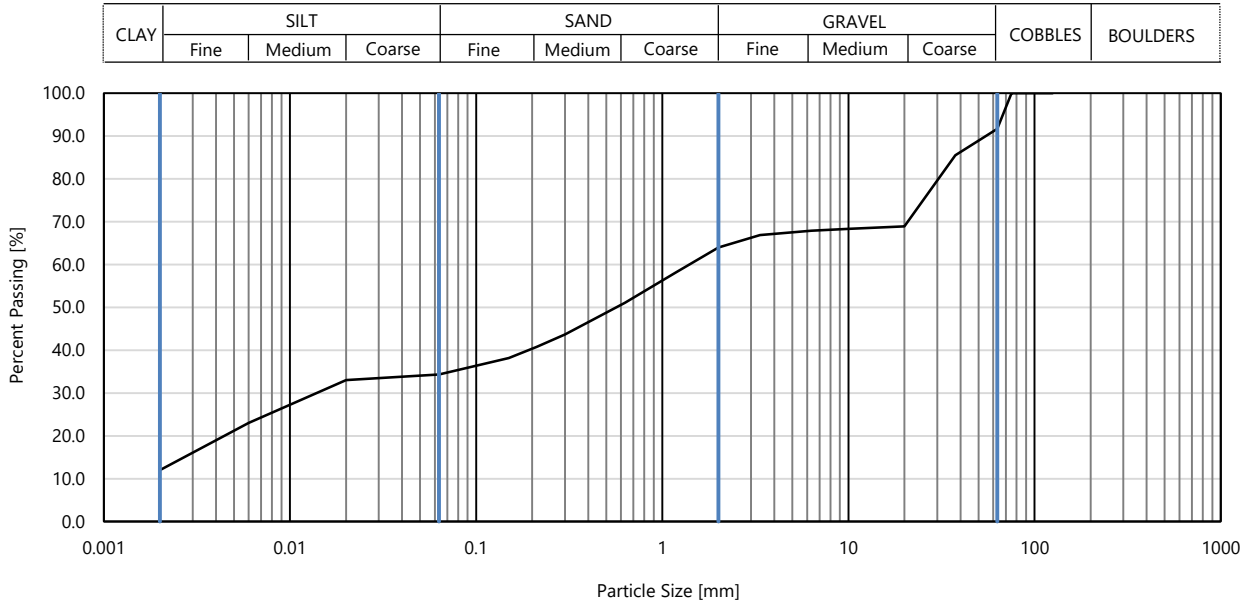
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown slightly gravelly slightly sandy CLAY with low cobble content	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	42



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	33
90.0	100	0.00600	23
75.0	100	0.00200	12
63.0	92		
37.5	86		
20.0	69		
10.0	68		
6.30	68		
3.35	67		
2.00	64		
1.18	58		
0.630	51		
0.300	44		
0.212	41		
0.150	38		
0.0630	34		

Dry Mass of Sample [g]	5169
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	8.3
Gravel	27.7
Sand	29.7
Silt	21.9
Clay	12.4

Grading Analysis	
D100 [mm]	75
D60 [mm]	1.4
D30 [mm]	0.0146
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

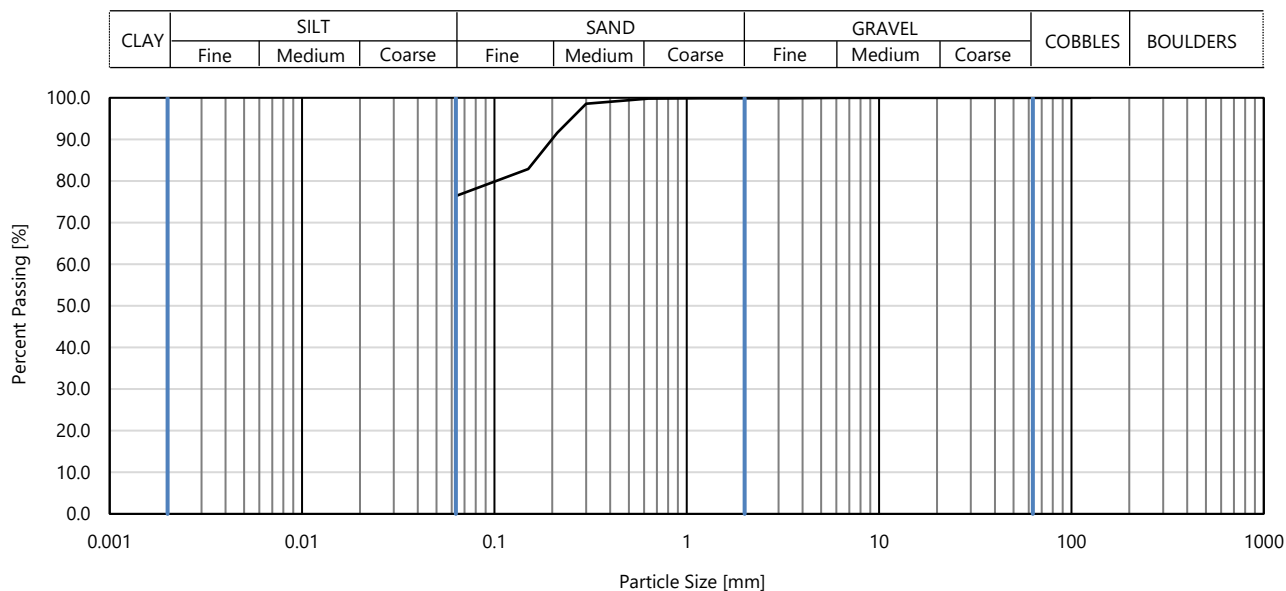
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.50
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	92		
0.150	83		
0.0630	76		

Dry Mass of Sample [g]	879
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	23.5
Fines <0.063mm	76.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	-
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

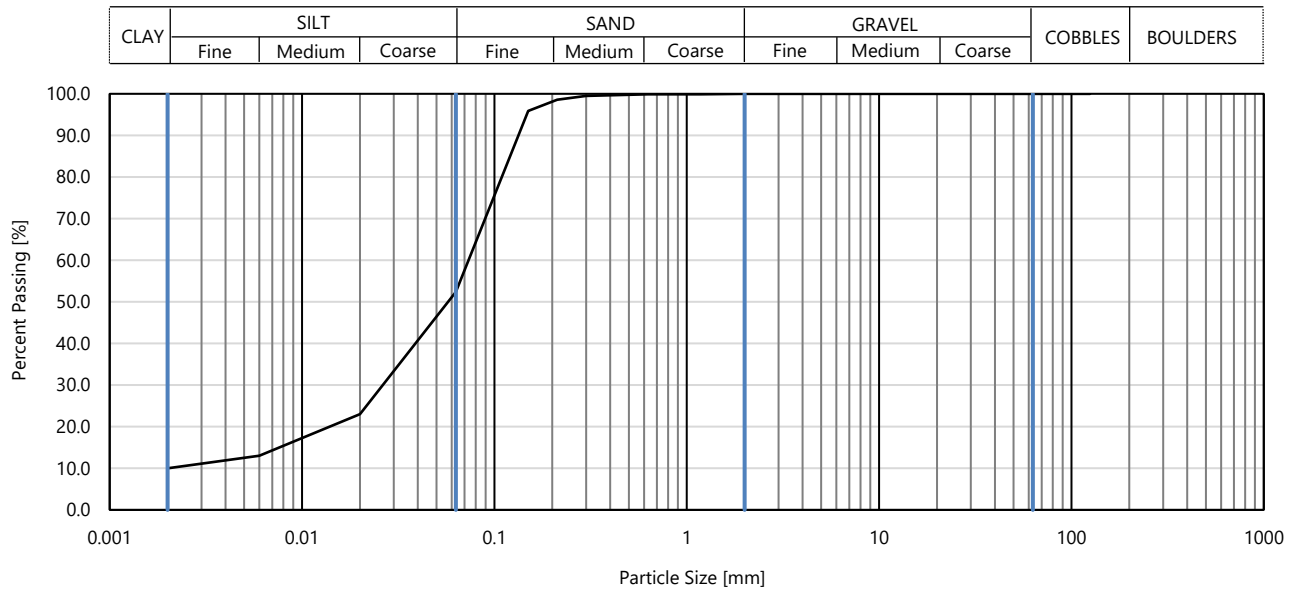
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.50
Specimen Description	Brown sandy SILT	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	23
90.0	100	0.00600	13
75.0	100	0.00200	10
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	96		
0.0630	52		

Dry Mass of Sample [g]	493
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	47.6
Silt	42.1
Clay	10.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0733
D30 [mm]	0.0261
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

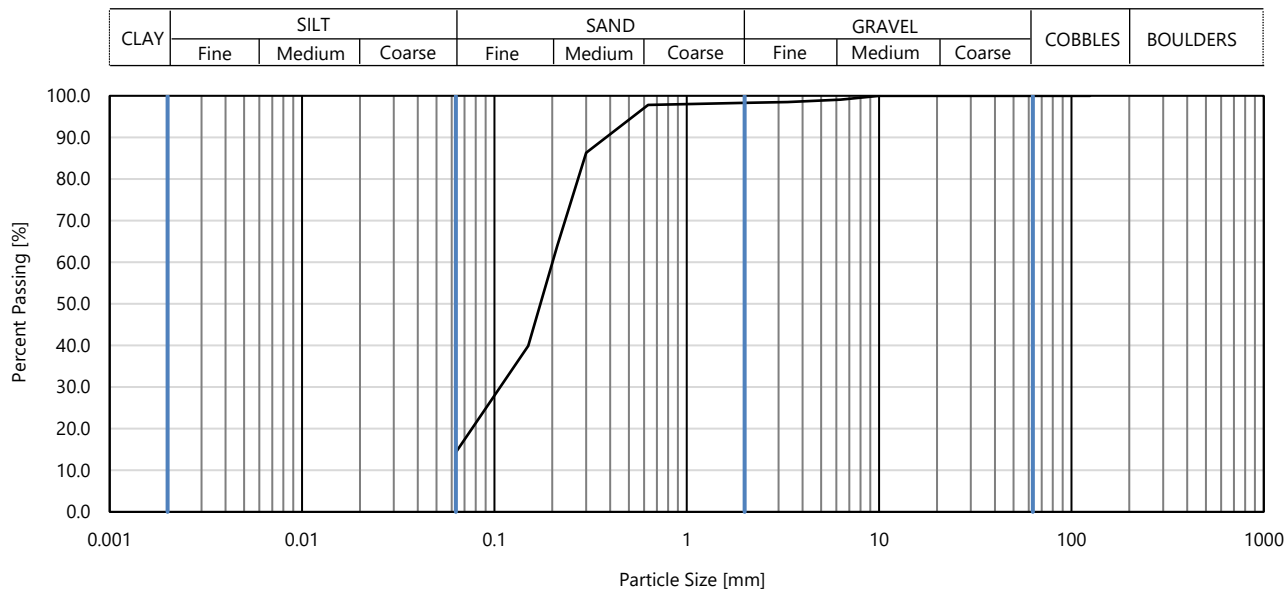
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.70
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	99		
3.35	99		
2.00	98		
1.18	98		
0.630	98		
0.300	86		
0.212	64		
0.150	40		
0.0630	14		

Dry Mass of Sample [g]	750
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.7
Sand	84.1
Fines <0.063mm	14.3

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.2
D30 [mm]	0.107
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

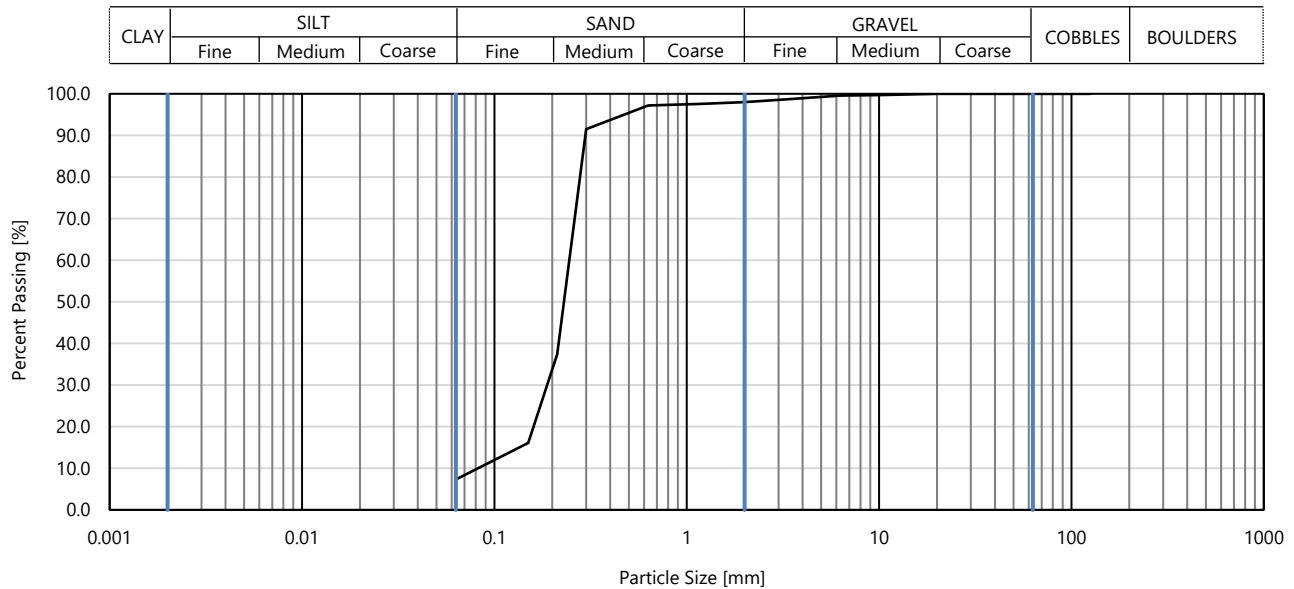
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	98		
1.18	98		
0.630	97		
0.300	92		
0.212	37		
0.150	16		
0.0630	7		

Dry Mass of Sample [g]	1966
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	2.0
Sand	90.7
Fines <0.063mm	7.3

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.245
D30 [mm]	0.188
D10 [mm]	0.0823
Coefficient of Uniformity	3
Coefficient of Curvature	1.8

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

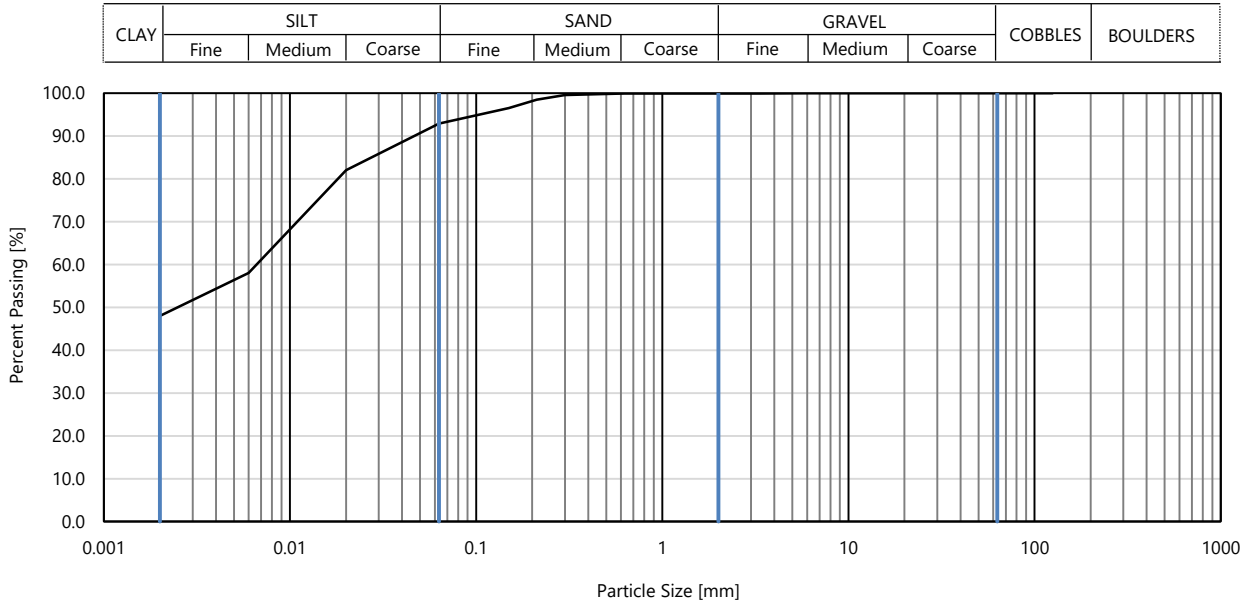
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	82
90.0	100	0.00600	58
75.0	100	0.00200	48
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	97		
0.0630	93		

Dry Mass of Sample [g]	646
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	7.0
Silt	45.3
Clay	47.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.00651
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

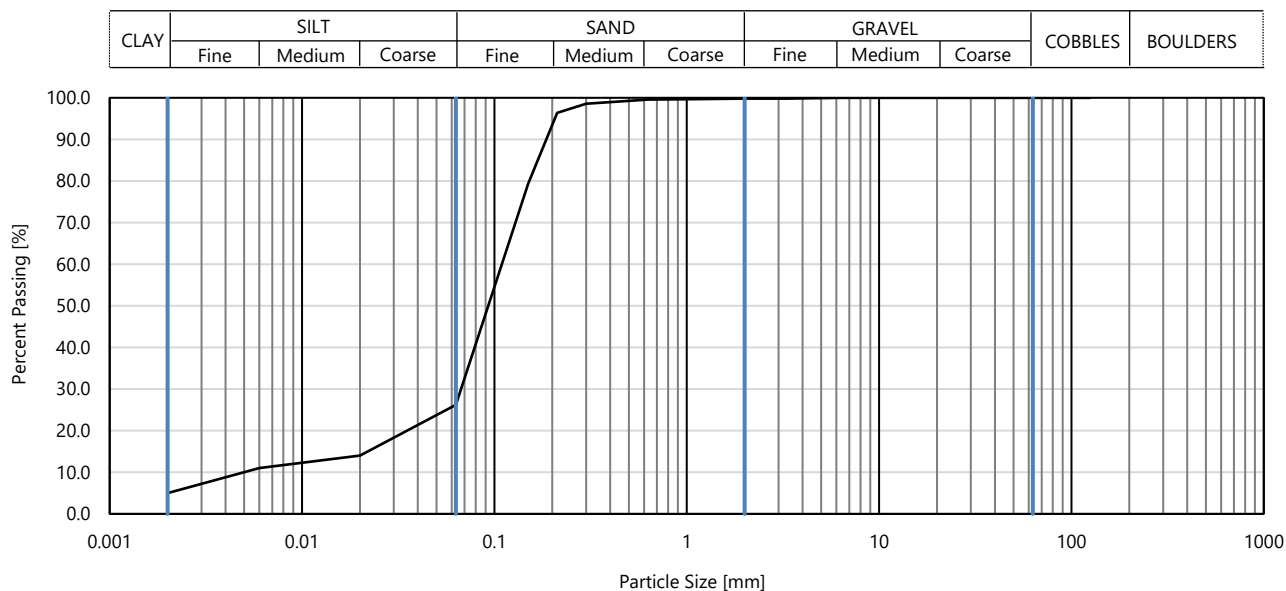
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	11
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	96		
0.150	79		
0.0630	26		

Dry Mass of Sample [g]	902
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	73.6
Silt	21.2
Clay	5.0

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.109
D30 [mm]	0.0671
D10 [mm]	0.00469
Coefficient of Uniformity	23
Coefficient of Curvature	8.8

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

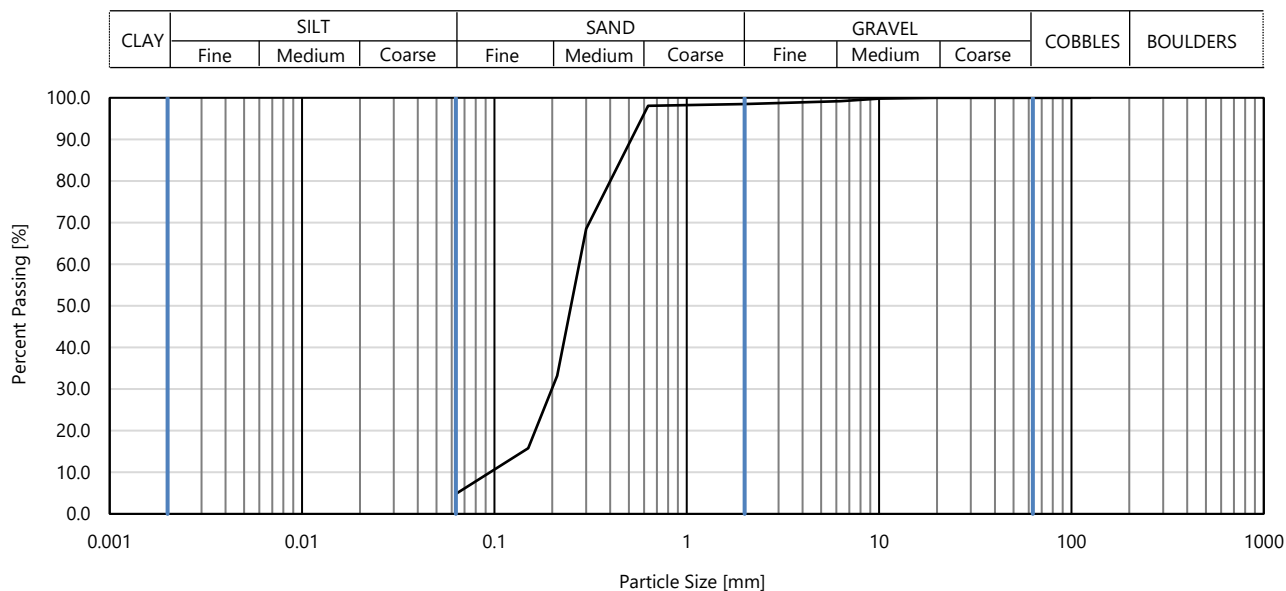
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	99		
3.35	99		
2.00	99		
1.18	98		
0.630	98		
0.300	69		
0.212	33		
0.150	16		
0.0630	5		

Dry Mass of Sample [g]	855
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.5
Sand	93.6
Fines <0.063mm	4.8

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.276
D30 [mm]	0.199
D10 [mm]	0.0947
Coefficient of Uniformity	2.9
Coefficient of Curvature	1.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

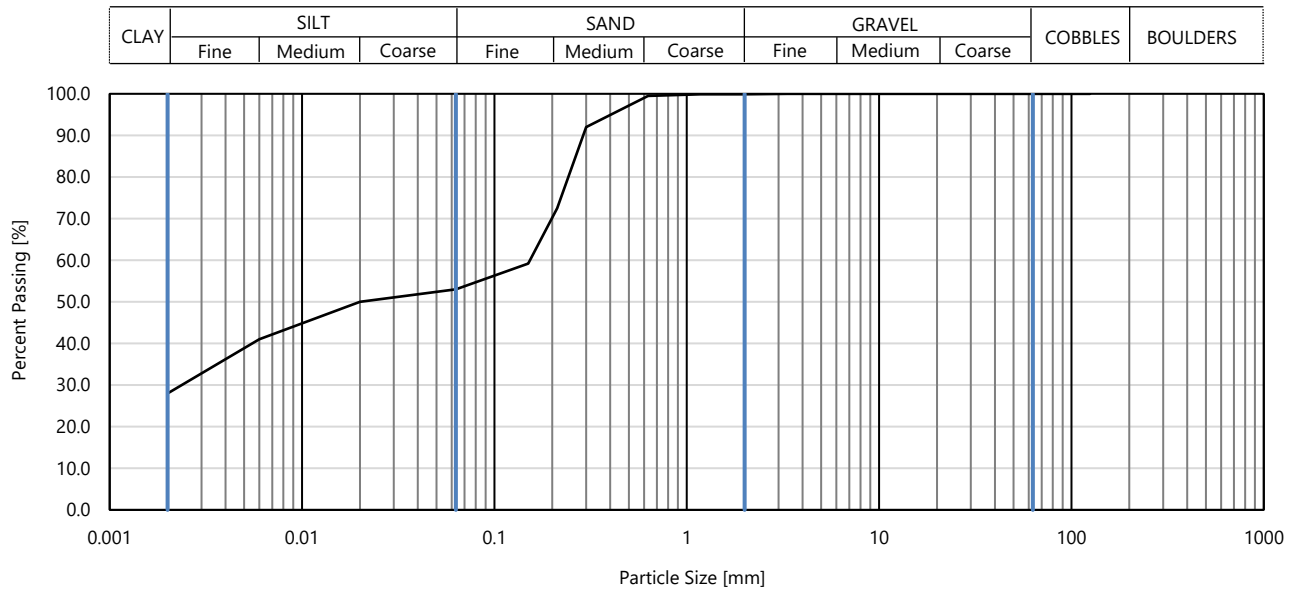
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	50
90.0	100	0.00600	41
75.0	100	0.00200	28
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	92		
0.212	73		
0.150	59		
0.0630	53		

Dry Mass of Sample [g]	865
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	47.0
Silt	24.6
Clay	28.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.153
D30 [mm]	0.00232
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

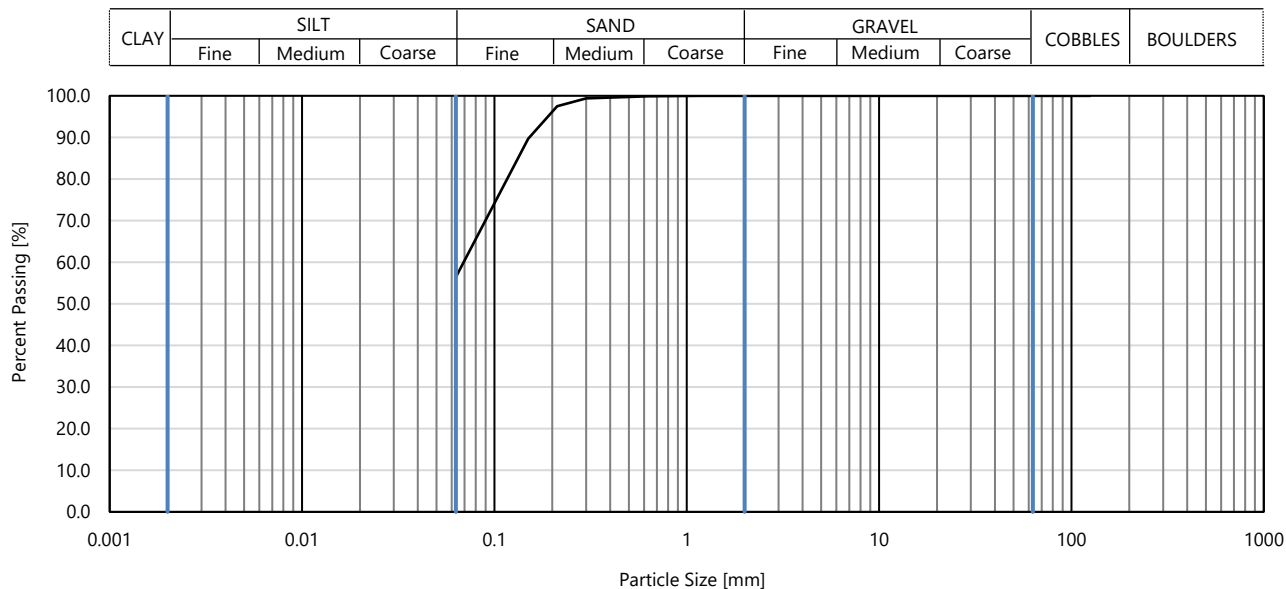
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	98		
0.150	90		
0.0630	56		

Dry Mass of Sample [g]	970
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	43.6
Fines <0.063mm	56.4

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0692
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

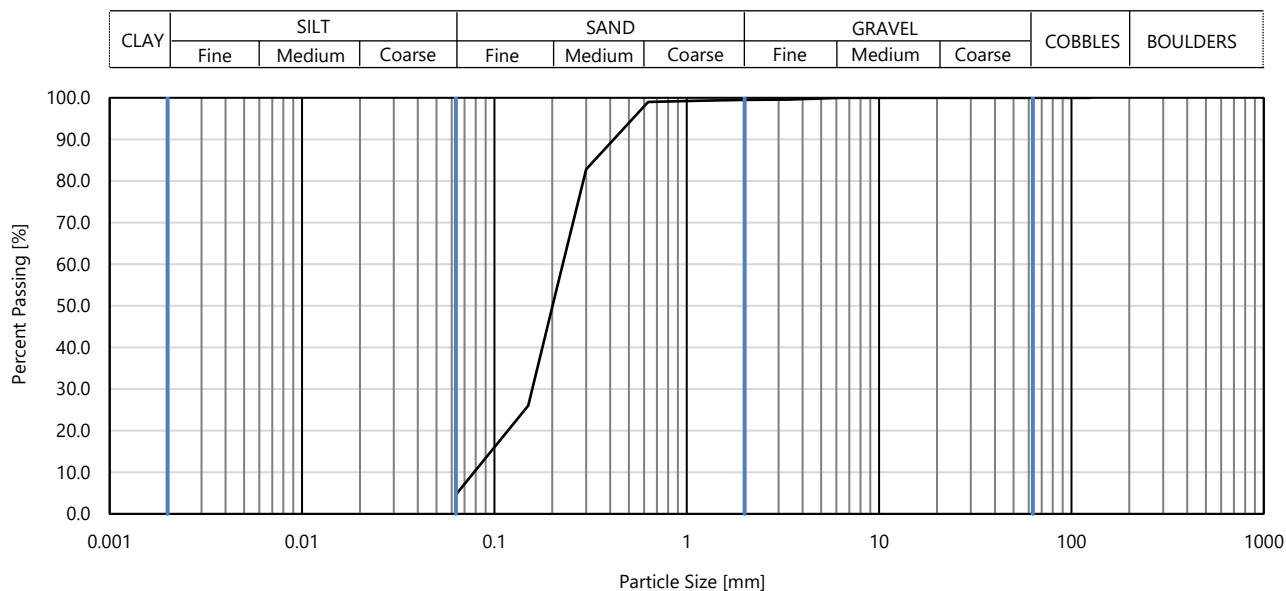
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.50
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	83		
0.212	55		
0.150	26		
0.0630	5		

Dry Mass of Sample [g]	909
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.5
Sand	94.8
Fines <0.063mm	4.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.227
D30 [mm]	0.158
D10 [mm]	0.0784
Coefficient of Uniformity	2.9
Coefficient of Curvature	1.4

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

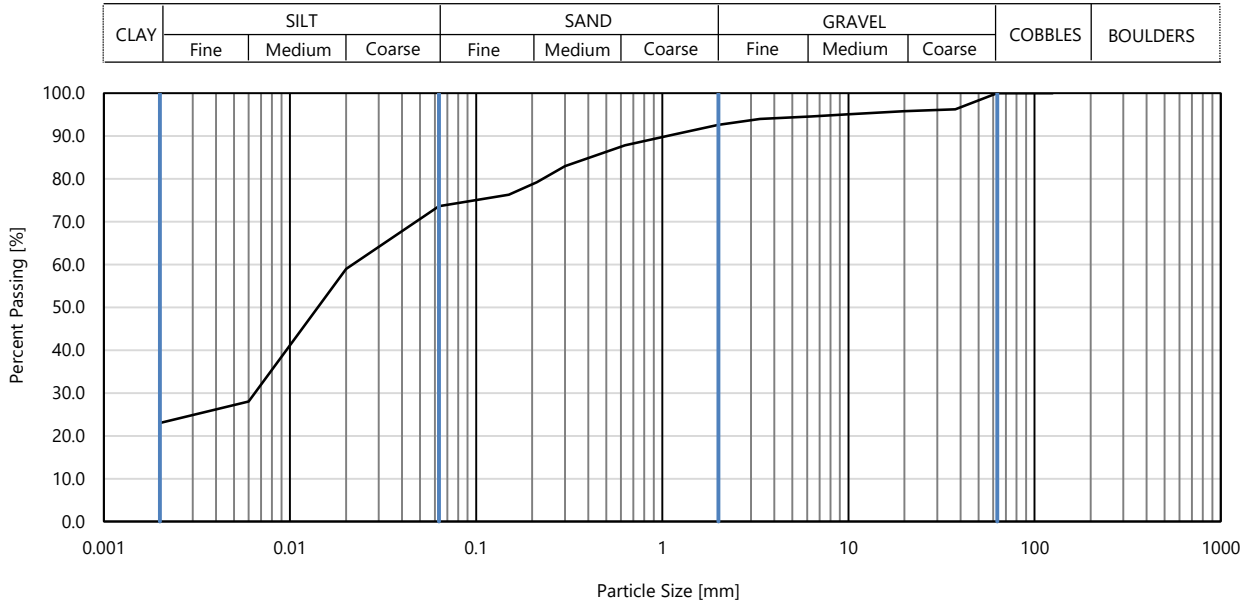
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	59
90.0	100	0.00600	28
75.0	100	0.00200	23
63.0	100		
37.5	96		
20.0	96		
10.0	95		
6.30	95		
3.35	94		
2.00	93		
1.18	90		
0.630	88		
0.300	83		
0.212	79		
0.150	76		
0.0630	74		

Dry Mass of Sample [g]	3891
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	7.4
Sand	19.0
Silt	50.6
Clay	23.0

Grading Analysis	
D100 [mm]	63
D60 [mm]	0.0214
D30 [mm]	0.00647
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

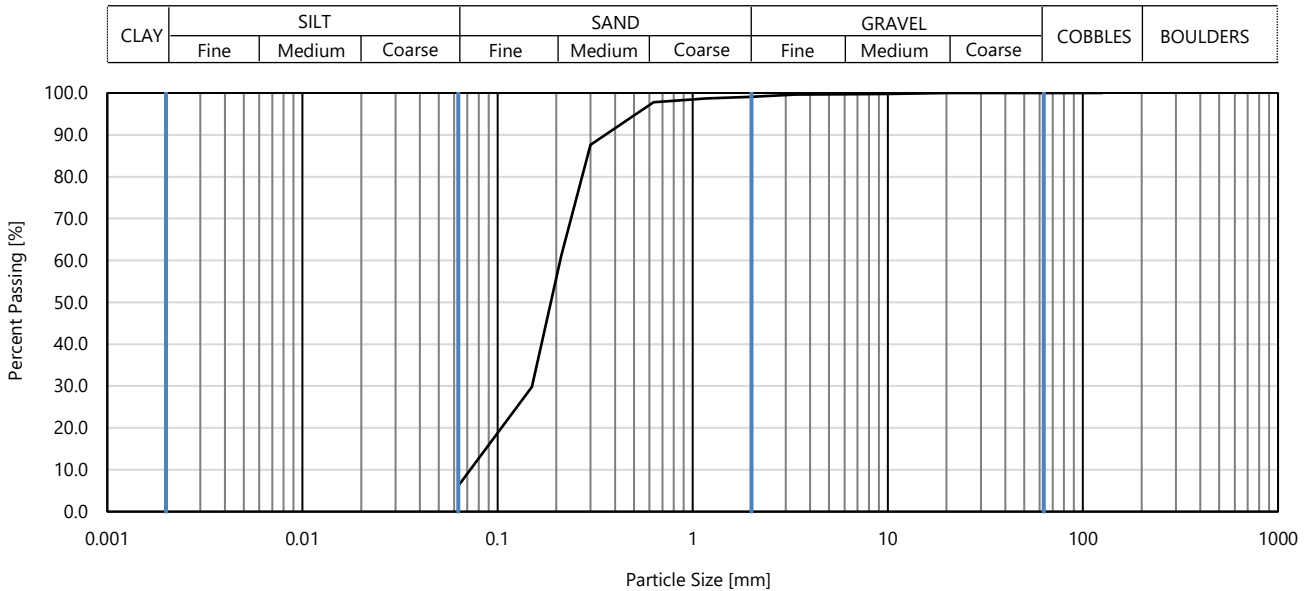
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	98		
0.300	88		
0.212	61		
0.150	30		
0.0630	6		

Dry Mass of Sample [g]	904
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.9
Sand	92.9
Fines <0.063mm	6.2

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.209
D30 [mm]	0.15
D10 [mm]	0.0723
Coefficient of Uniformity	2.9
Coefficient of Curvature	1.5

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

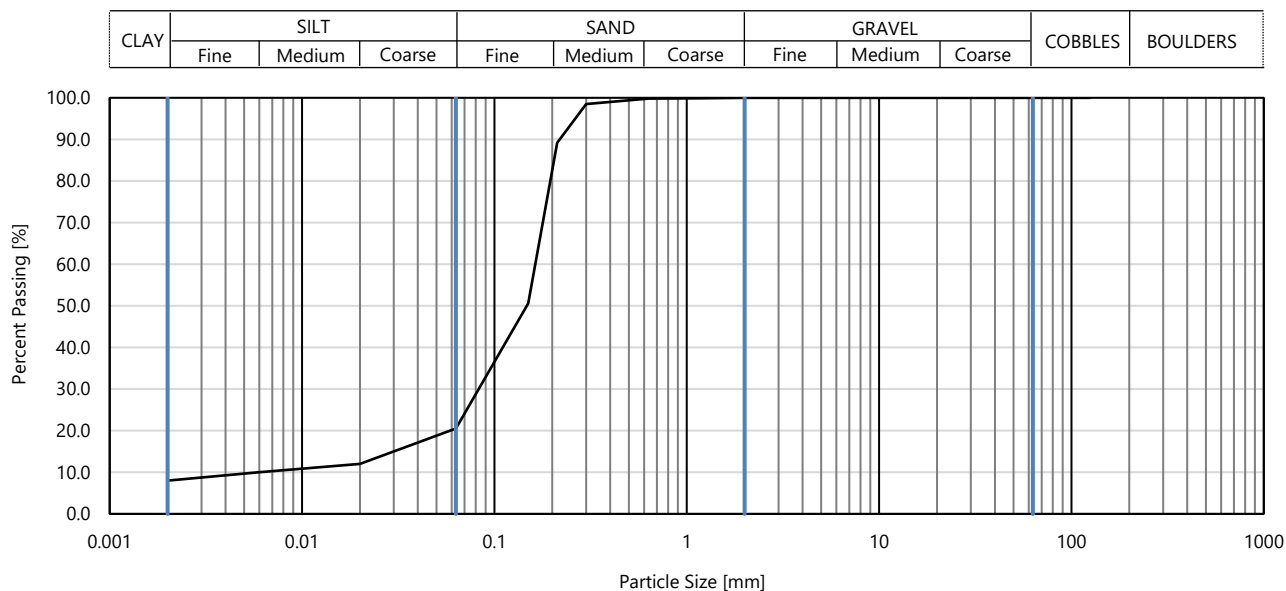
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	12
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	89		
0.150	51		
0.0630	21		

Dry Mass of Sample [g]	840
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	79.4
Silt	12.2
Clay	8.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.163
D30 [mm]	0.0828
D10 [mm]	0.00672
Coefficient of Uniformity	24
Coefficient of Curvature	6.3

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

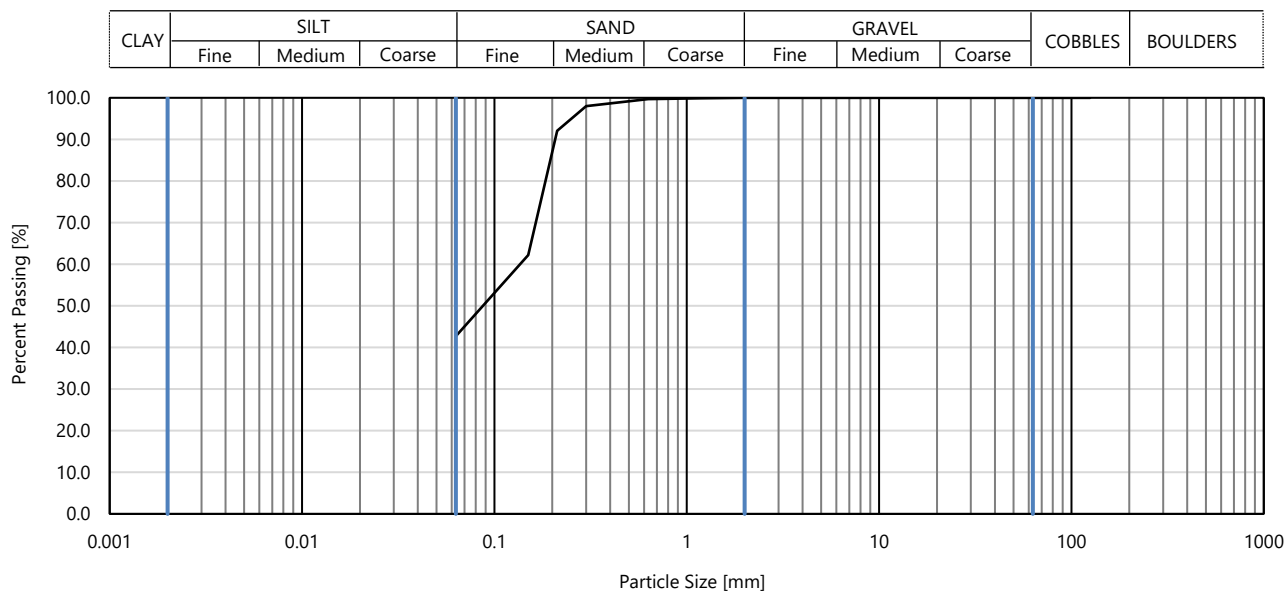
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	92		
0.150	62		
0.0630	43		

Dry Mass of Sample [g]	728
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	57.3
Fines <0.063mm	42.7

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.136
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

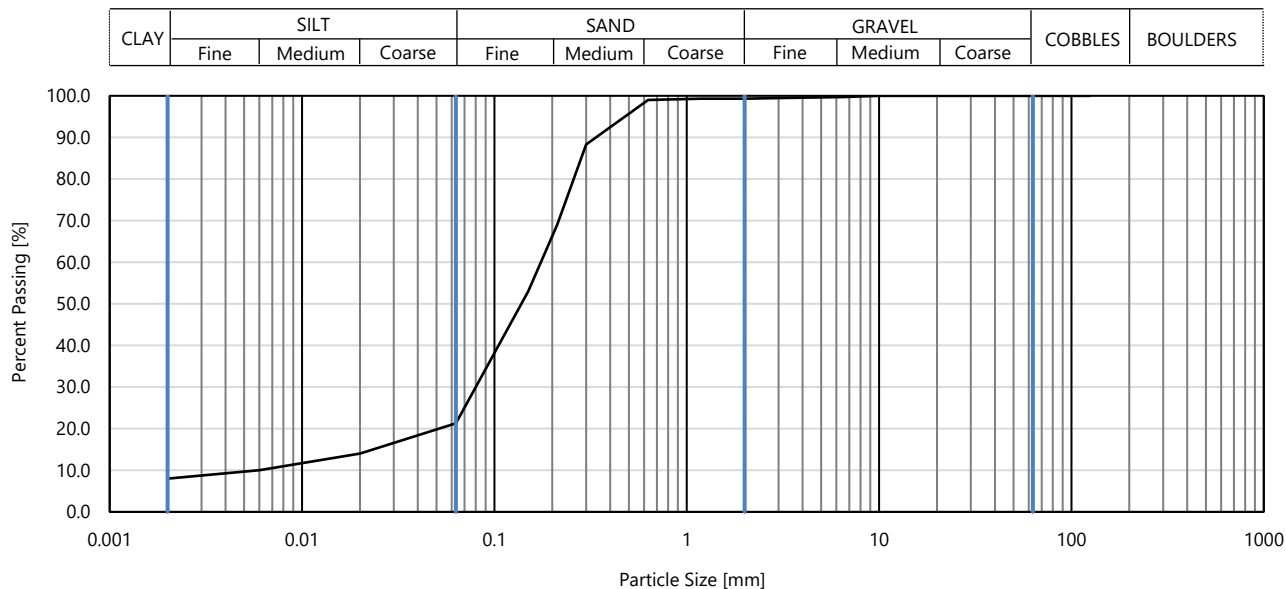
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	99		
0.300	88		
0.212	69		
0.150	53		
0.0630	21		

Dry Mass of Sample [g]	903
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.7
Sand	78.0
Silt	13.7
Clay	7.6

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.175
D30 [mm]	0.0799
D10 [mm]	0.00533
Coefficient of Uniformity	33
Coefficient of Curvature	6.9

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

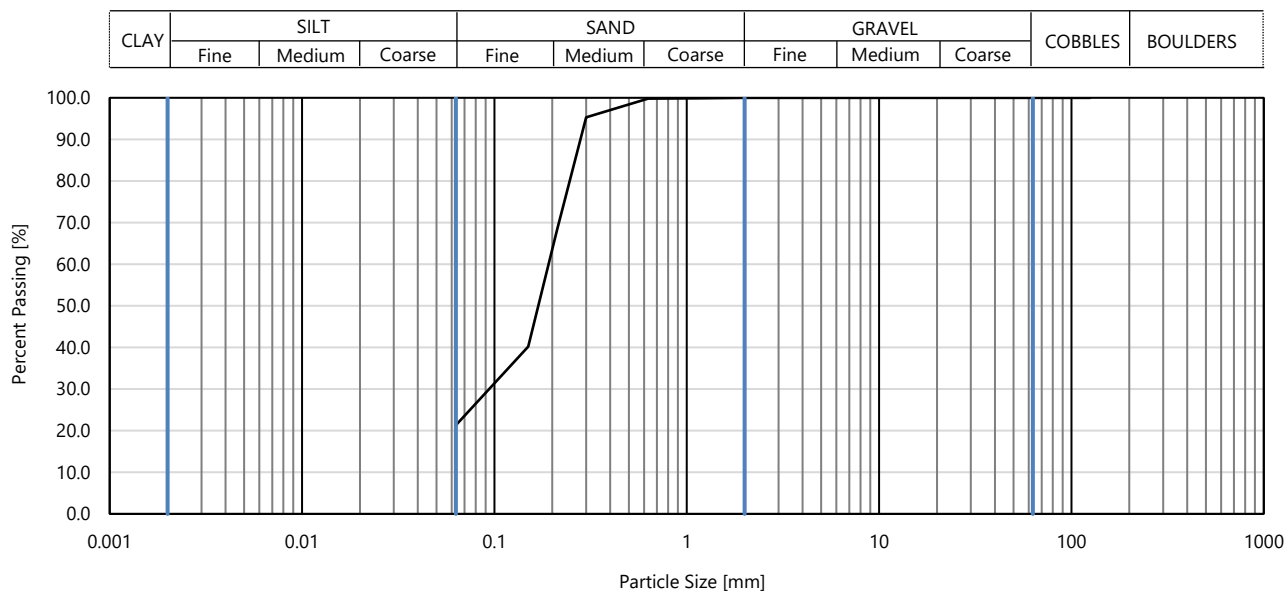
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.60
Specimen Description	Brown very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	95		
0.212	68		
0.150	40		
0.0630	21		

Dry Mass of Sample [g]	966
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	78.7
Fines <0.063mm	21.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.191
D30 [mm]	0.094
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

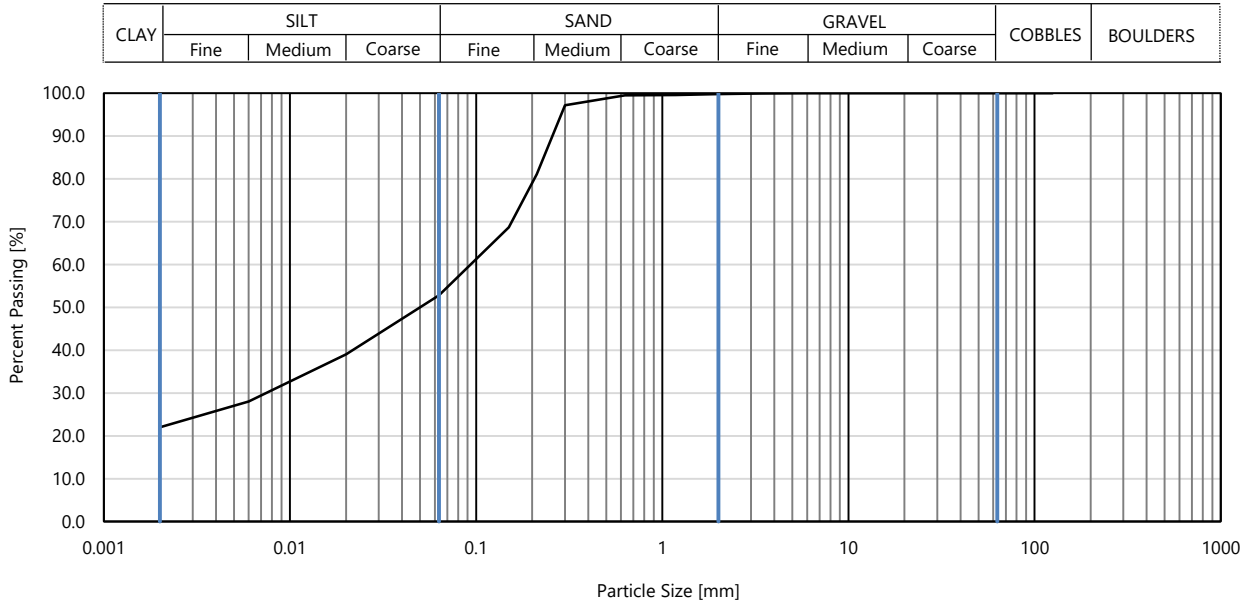
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	D
Specimen Reference	Specimen Depth [m]	Sample Reference	16



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	39
90.0	100	0.00600	28
75.0	100	0.00200	22
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	81		
0.150	69		
0.0630	53		

Dry Mass of Sample [g]	334
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	47.0
Silt	30.7
Clay	22.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0935
D30 [mm]	0.00768
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

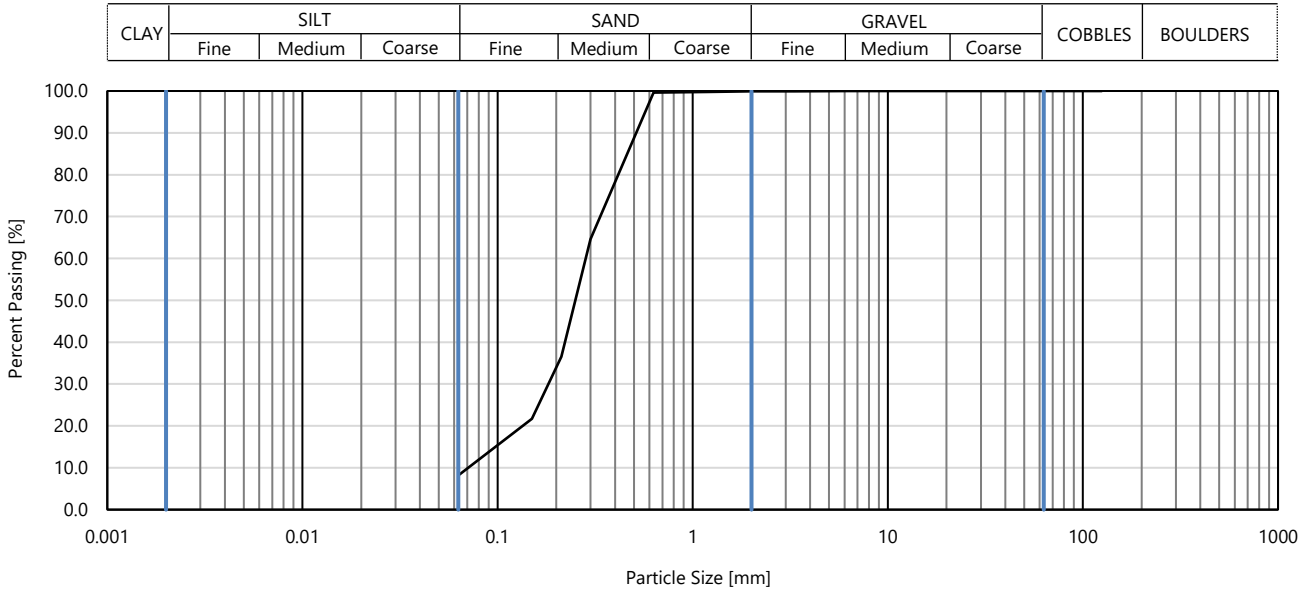
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	7.50
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	65		
0.212	37		
0.150	22		
0.0630	8		

Dry Mass of Sample [g]	1155
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	91.6
Fines <0.063mm	8.2

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.284
D30 [mm]	0.182
D10 [mm]	0.0705
Coefficient of Uniformity	4
Coefficient of Curvature	1.7

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

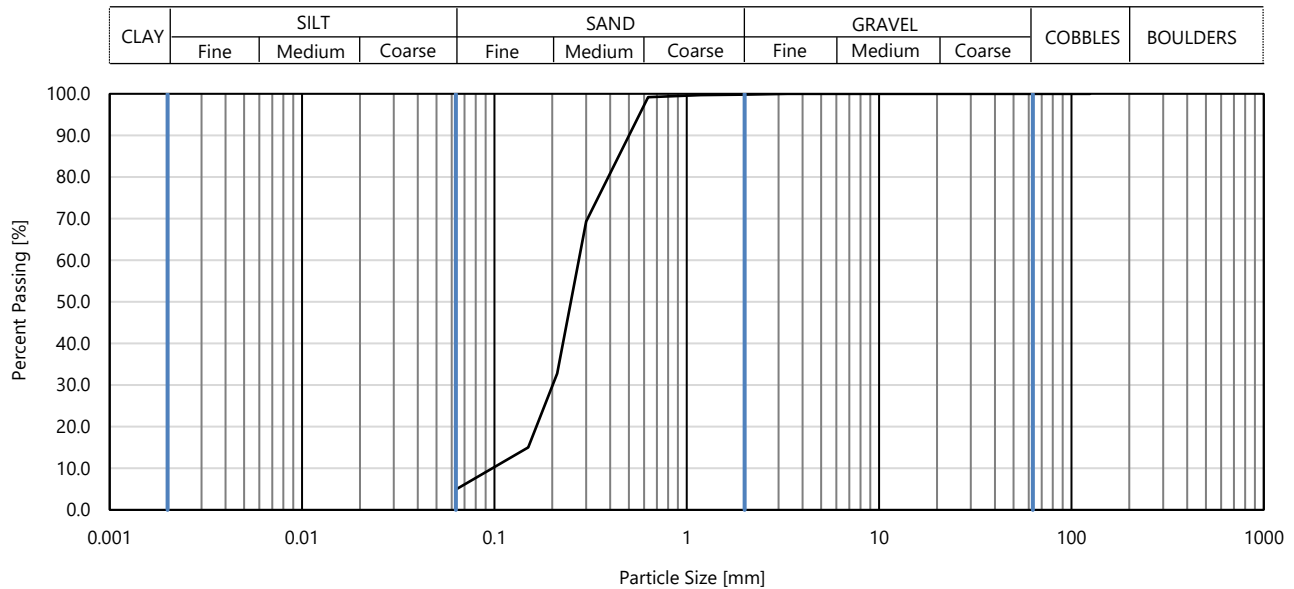
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	69		
0.212	33		
0.150	15		
0.0630	5		

Dry Mass of Sample [g]	417
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	95.0
Fines <0.063mm	4.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.275
D30 [mm]	0.201
D10 [mm]	0.0978
Coefficient of Uniformity	2.8
Coefficient of Curvature	1.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

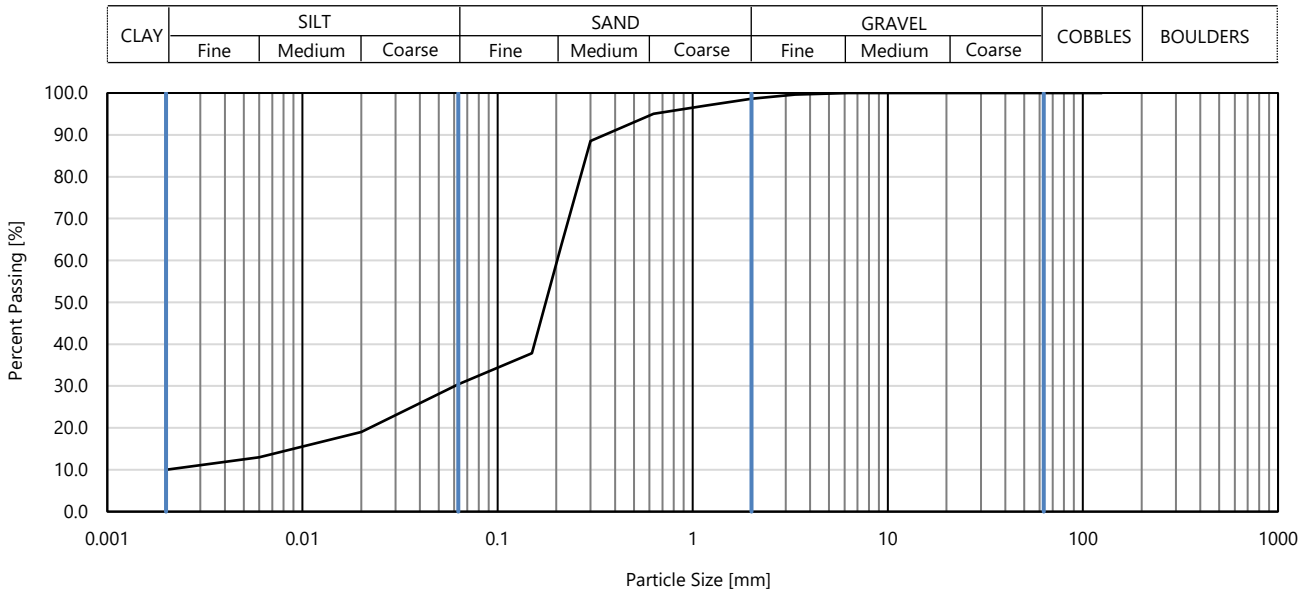
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	19
90.0	100	0.00600	13
75.0	100	0.00200	10
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	97		
0.630	95		
0.300	89		
0.212	64		
0.150	38		
0.0630	30		

Dry Mass of Sample [g]	693
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.4
Sand	68.1
Silt	20.6
Clay	9.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.202
D30 [mm]	0.0603
D10 [mm]	0.00206
Coefficient of Uniformity	98
Coefficient of Curvature	8.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

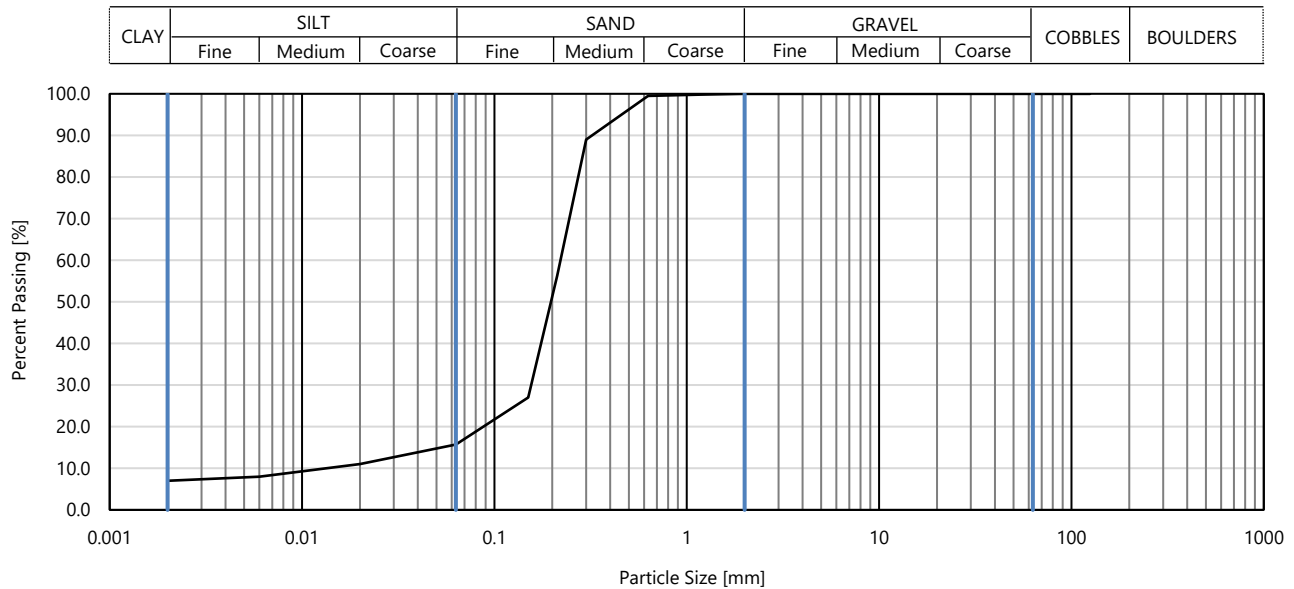
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.40
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	11
90.0	100	0.00600	8
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	89		
0.212	56		
0.150	27		
0.0630	16		

Dry Mass of Sample [g]	1075
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	84.3
Silt	8.3
Clay	7.4

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.22
D30 [mm]	0.155
D10 [mm]	0.0123
Coefficient of Uniformity	18
Coefficient of Curvature	8.9

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

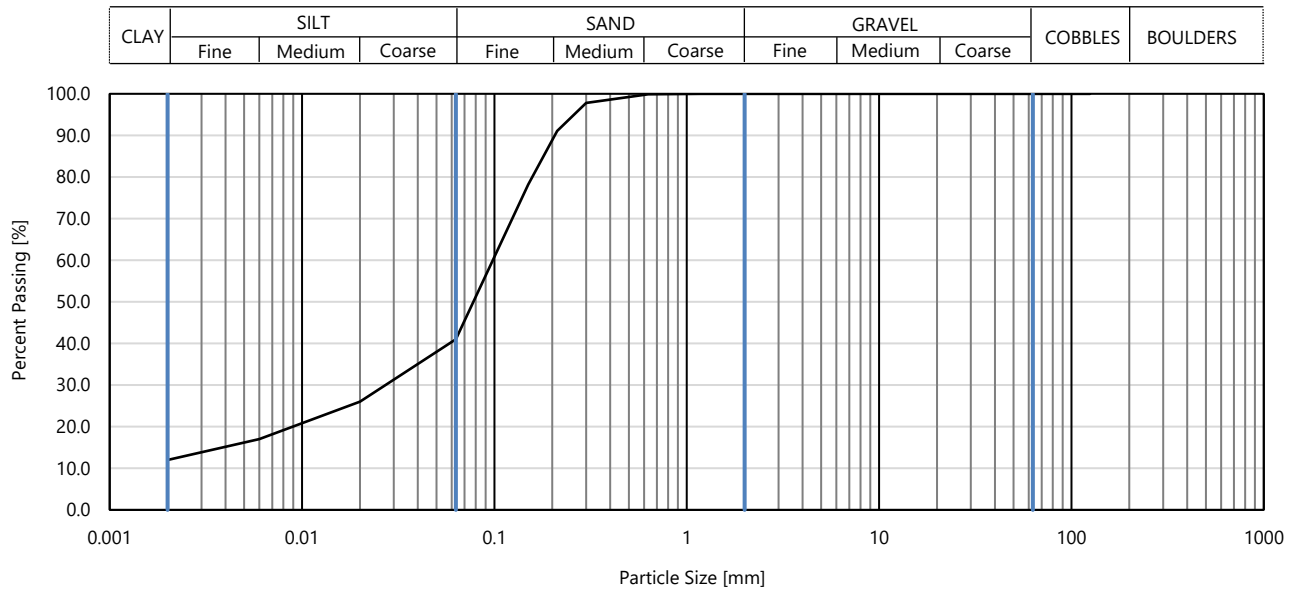
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	26
90.0	100	0.00600	17
75.0	100	0.00200	12
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	91		
0.150	78		
0.0630	41		

Dry Mass of Sample [g]	962
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	59.0
Silt	28.5
Clay	12.5

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.0981
D30 [mm]	0.0279
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

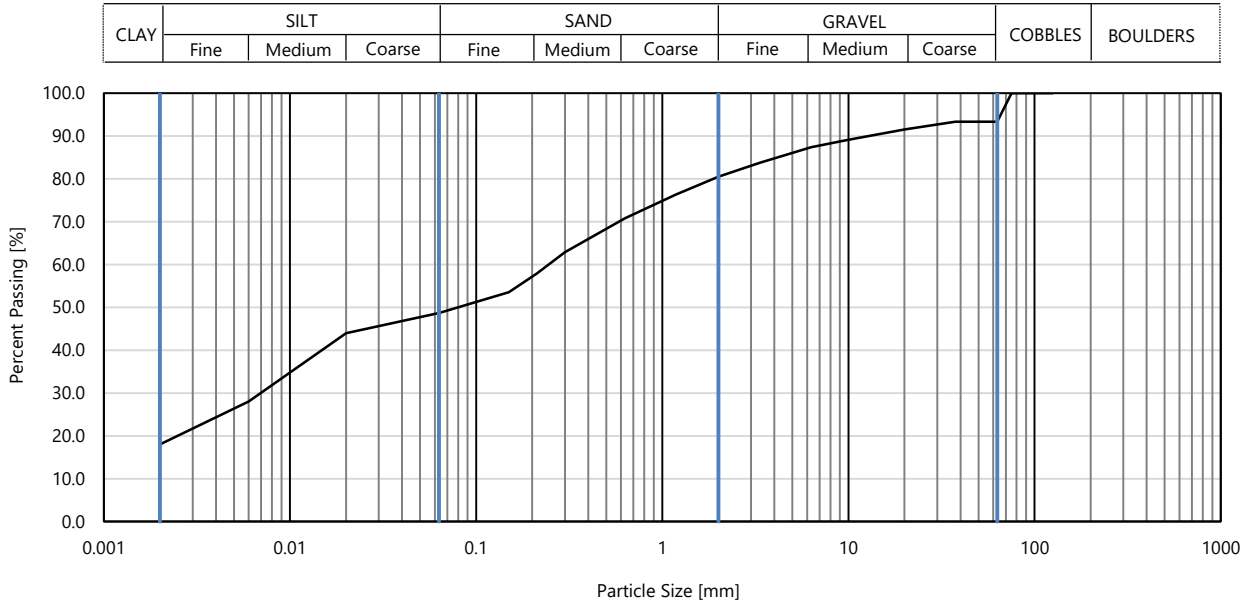
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.90
Specimen Description	Brown slightly gravelly slightly sandy CLAY with low cobble contents	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	44
90.0	100	0.00600	28
75.0	100	0.00200	18
63.0	93		
37.5	93		
20.0	92		
10.0	89		
6.30	87		
3.35	84		
2.00	81		
1.18	76		
0.630	71		
0.300	63		
0.212	58		
0.150	54		
0.0630	49		

Dry Mass of Sample [g]	8531
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	6.7
Gravel	12.8
Sand	31.8
Silt	30.2
Clay	18.5

Grading Analysis	
D100 [mm]	75
D60 [mm]	0.245
D30 [mm]	0.00714
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

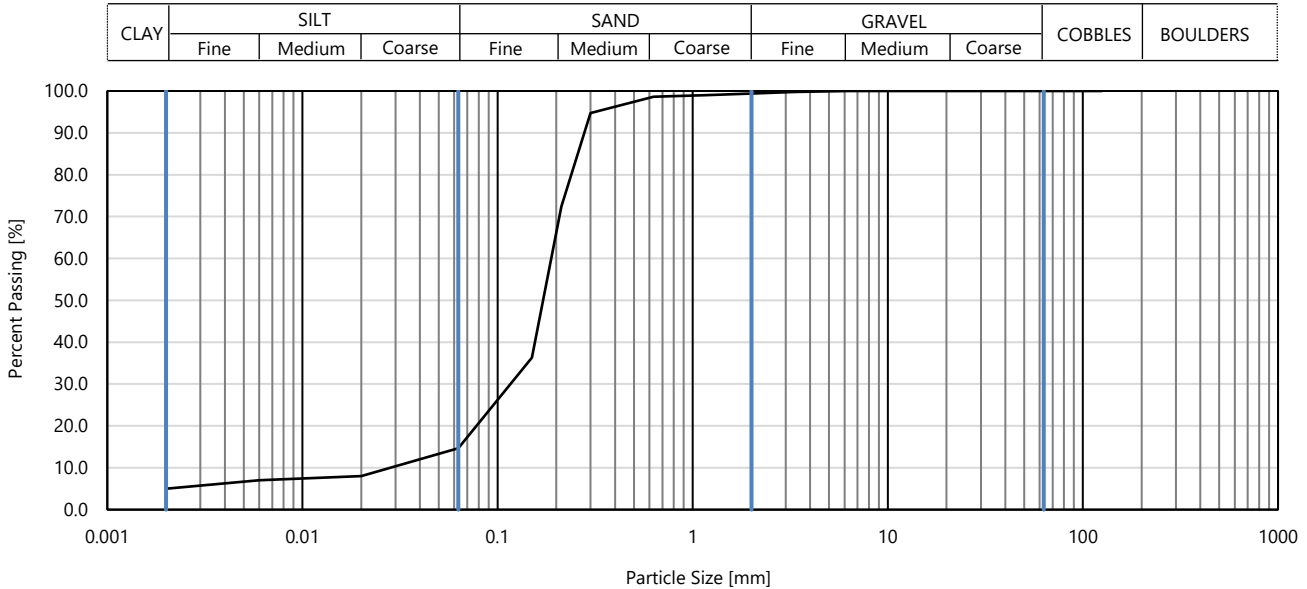
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	8
90.0	100	0.00600	7
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	99		
0.300	95		
0.212	72		
0.150	36		
0.0630	15		

Dry Mass of Sample [g]	977
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.6
Sand	84.7
Silt	9.4
Clay	5.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.188
D30 [mm]	0.116
D10 [mm]	0.0267
Coefficient of Uniformity	7.1
Coefficient of Curvature	2.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

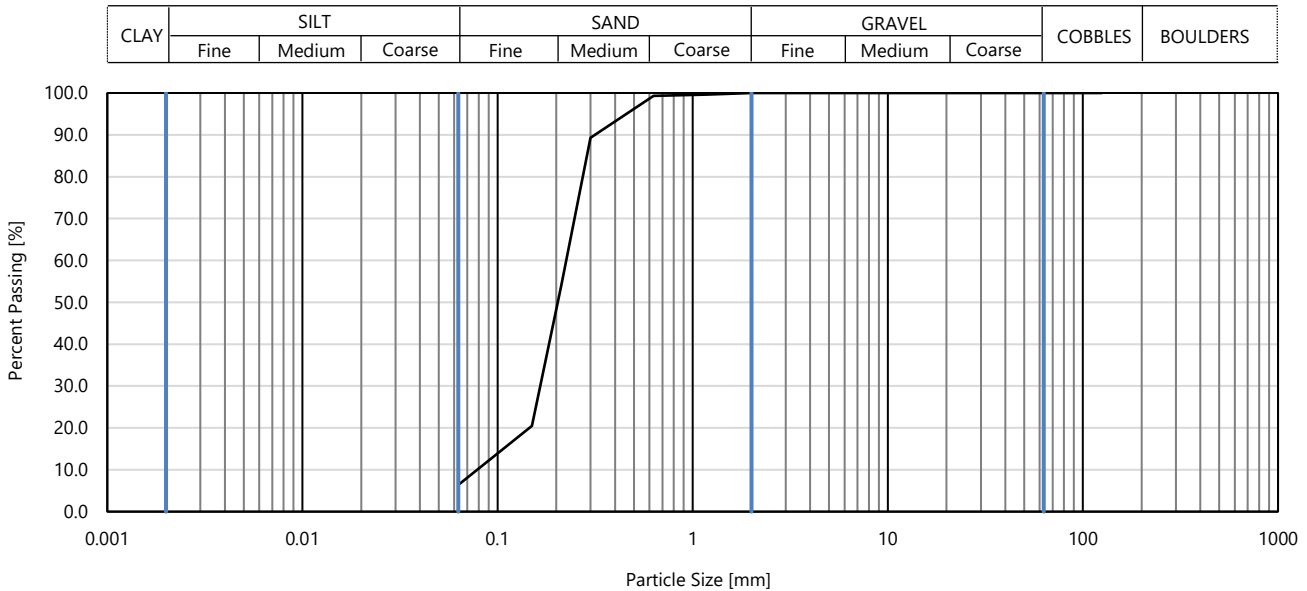
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.80
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	89		
0.212	54		
0.150	21		
0.0630	6		

Dry Mass of Sample [g]	975
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	93.6
Fines <0.063mm	6.4

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.225
D30 [mm]	0.165
D10 [mm]	0.0785
Coefficient of Uniformity	2.9
Coefficient of Curvature	1.6

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

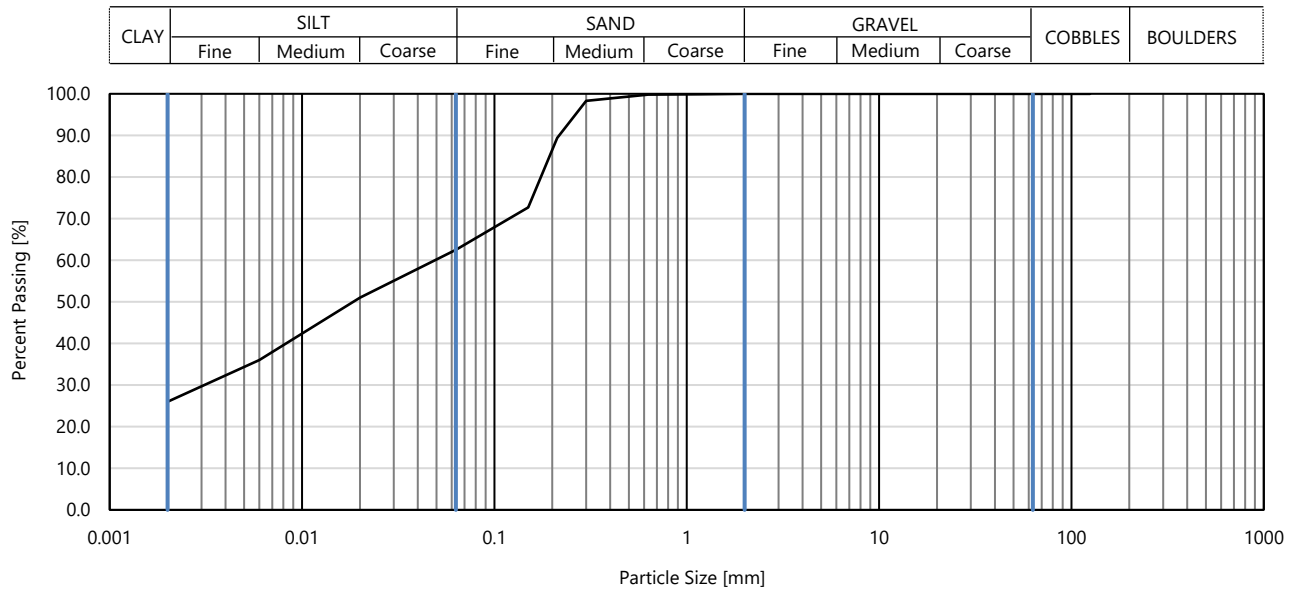
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	51
90.0	100	0.00600	36
75.0	100	0.00200	26
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	89		
0.150	73		
0.0630	63		

Dry Mass of Sample [g]	800
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	37.4
Silt	36.5
Clay	26.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0492
D30 [mm]	0.00312
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

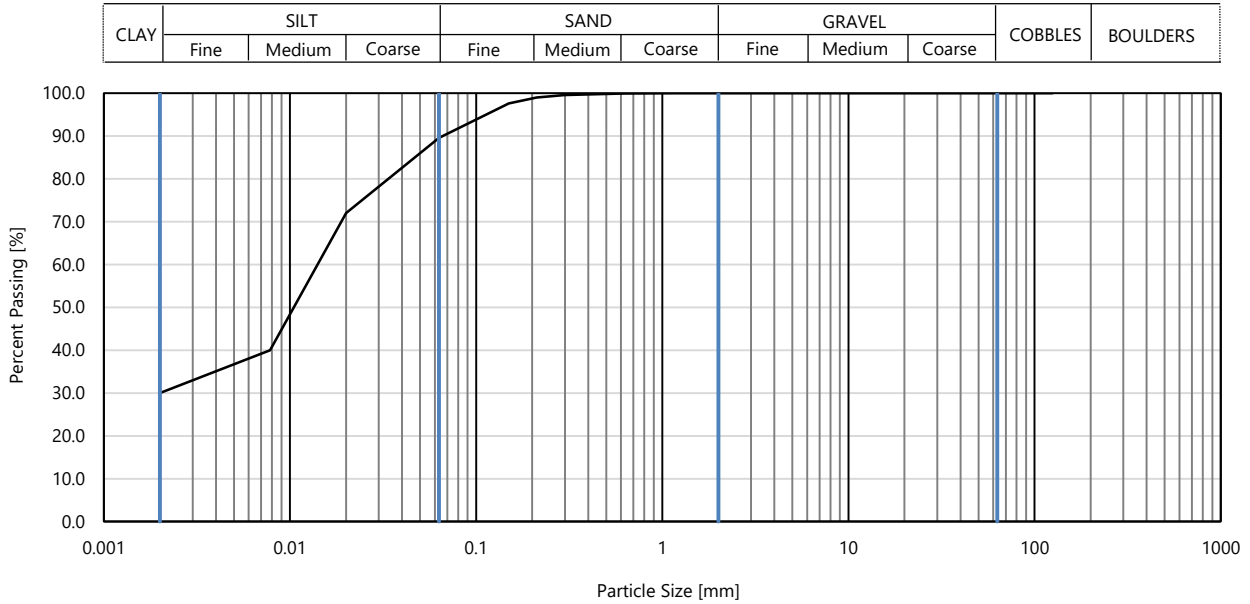
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.30
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	72
90.0	100	0.00781	40
75.0	100	0.00200	30
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	98		
0.0630	90		

Dry Mass of Sample [g]	858
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	10.4
Silt	59.8
Clay	29.8

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.014
D30 [mm]	0.00204
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

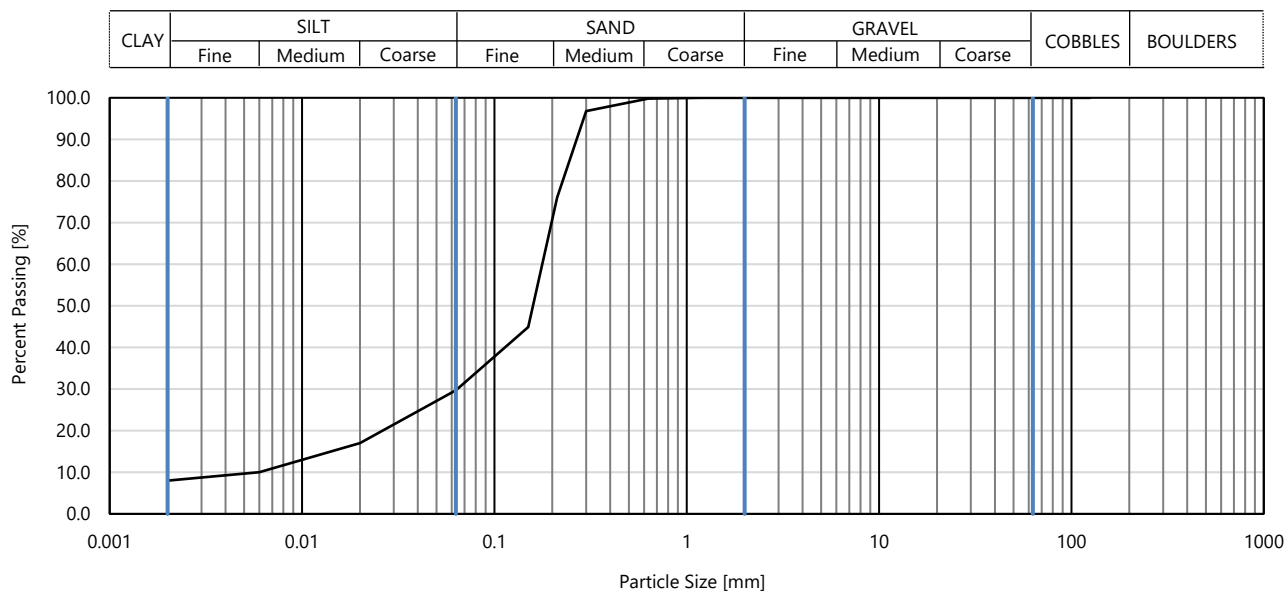
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.30
Specimen Description	Brown very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	17
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	76		
0.150	45		
0.0630	30		

Dry Mass of Sample [g]	1399
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	70.3
Silt	21.3
Clay	8.4

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.177
D30 [mm]	0.0639
D10 [mm]	0.00513
Coefficient of Uniformity	35
Coefficient of Curvature	4.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

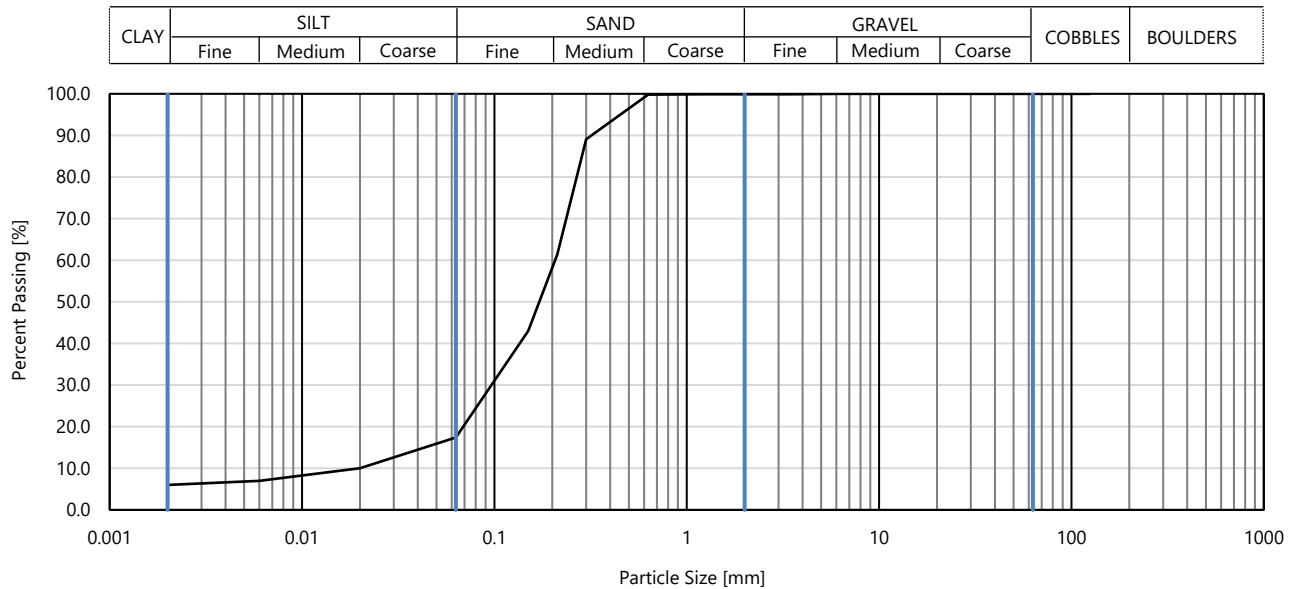
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	7.30
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	10
90.0	100	0.00600	7
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	89		
0.212	61		
0.150	43		
0.0630	17		

Dry Mass of Sample [g]	917
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	82.5
Silt	11.7
Clay	5.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.207
D30 [mm]	0.0966
D10 [mm]	0.0181
Coefficient of Uniformity	11
Coefficient of Curvature	2.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

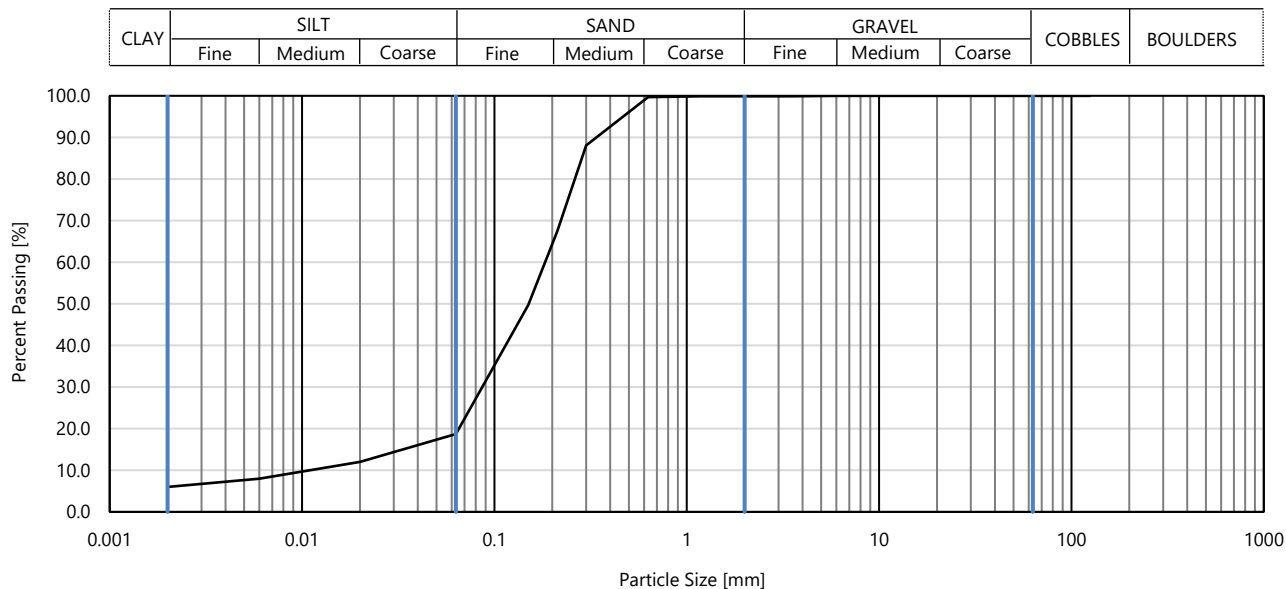
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.30
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	29



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	12
90.0	100	0.00600	8
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	88		
0.212	67		
0.150	50		
0.0630	19		

Dry Mass of Sample [g]	949
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	81.2
Silt	12.6
Clay	6.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.184
D30 [mm]	0.0864
D10 [mm]	0.0117
Coefficient of Uniformity	16
Coefficient of Curvature	3.5

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

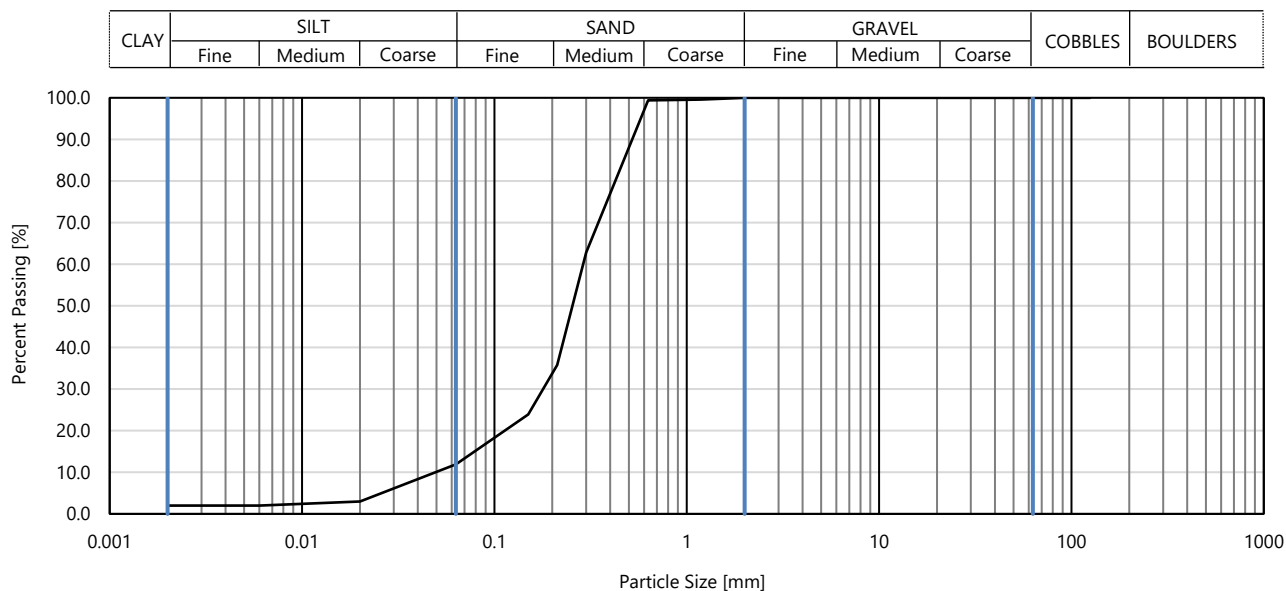
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.30
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	3
90.0	100	0.00600	2
75.0	100	0.00200	2
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	63		
0.212	36		
0.150	24		
0.0630	12		

Dry Mass of Sample [g]	1794
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	88.1
Silt	10.2
Clay	1.7

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.289
D30 [mm]	0.179
D10 [mm]	0.0485
Coefficient of Uniformity	6
Coefficient of Curvature	2.3

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

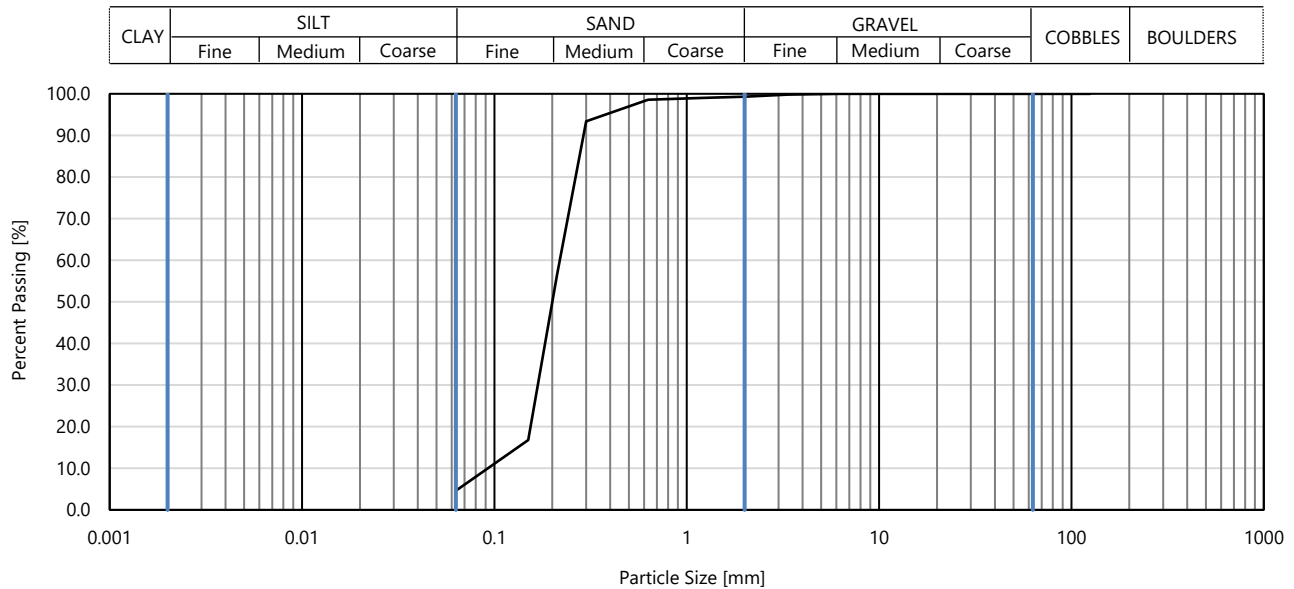
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	99		
0.300	93		
0.212	57		
0.150	17		
0.0630	5		

Dry Mass of Sample [g]	1265
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.7
Sand	94.8
Fines <0.063mm	4.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.219
D30 [mm]	0.168
D10 [mm]	0.0927
Coefficient of Uniformity	2.4
Coefficient of Curvature	1.4

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

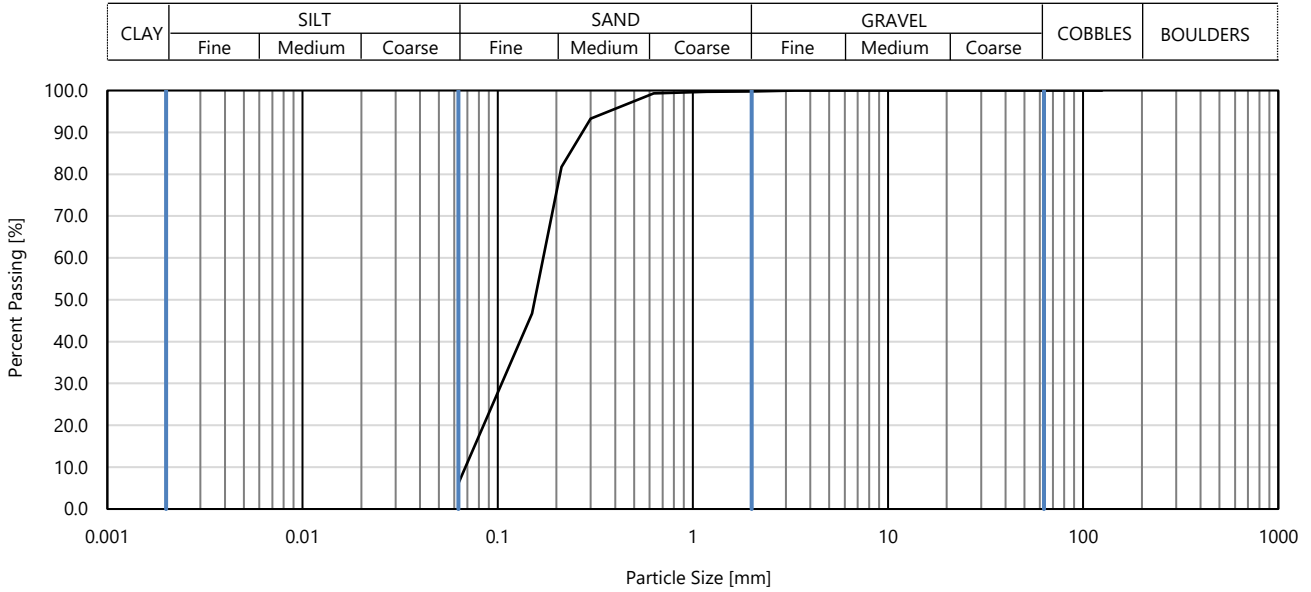
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.80
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	93		
0.212	82		
0.150	47		
0.0630	6		

Dry Mass of Sample [g]	750
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	93.7
Fines <0.063mm	6.2

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.171
D30 [mm]	0.105
D10 [mm]	0.0684
Coefficient of Uniformity	2.5
Coefficient of Curvature	0.94

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

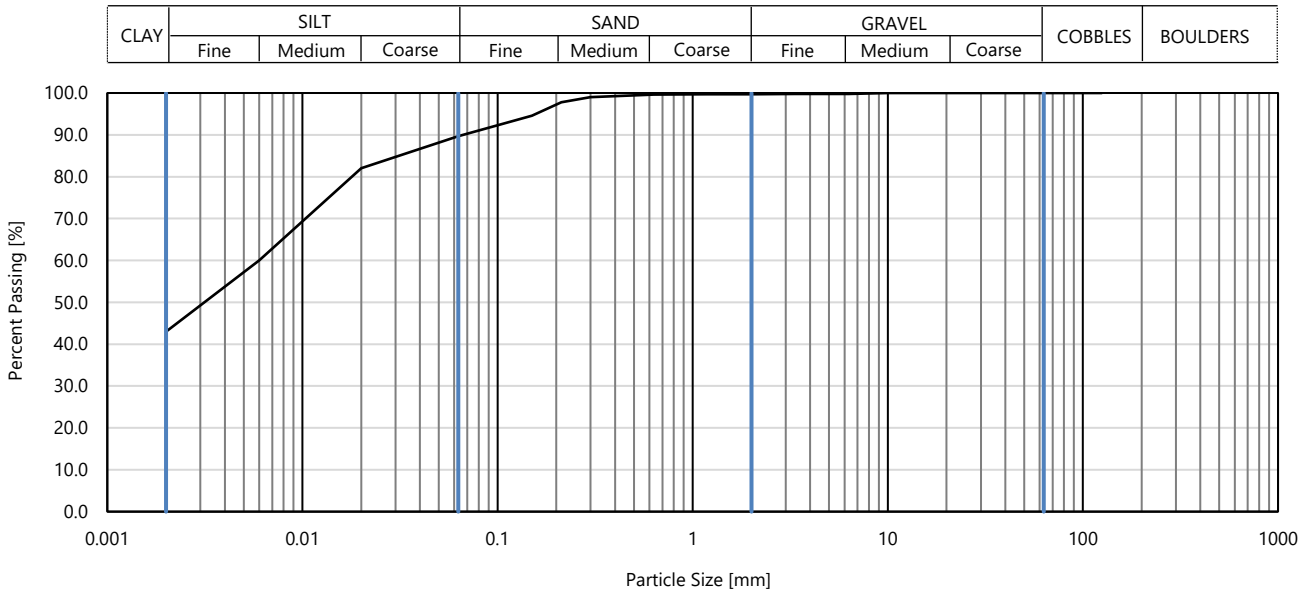
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	14



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	82
90.0	100	0.00600	60
75.0	100	0.00200	43
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	98		
0.150	95		
0.0630	90		

Dry Mass of Sample [g]	689
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	10.0
Silt	46.9
Clay	42.8

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.00598
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

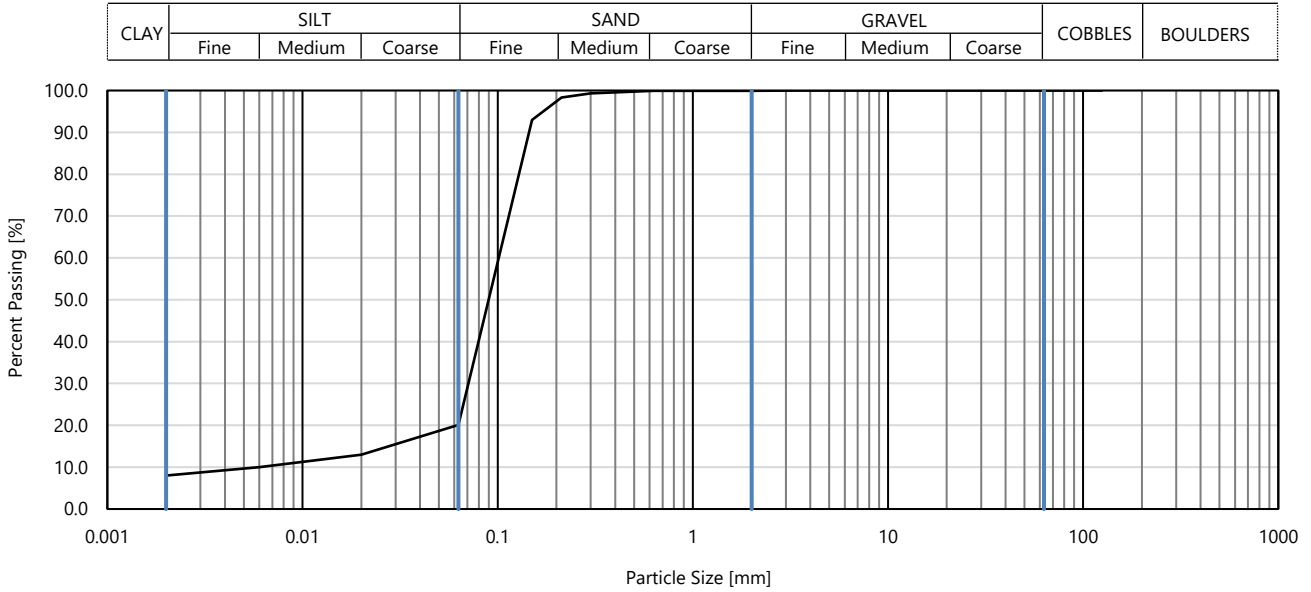
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	13
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	98		
0.150	93		
0.0630	20		

Dry Mass of Sample [g]	857
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	79.9
Silt	12.1
Clay	7.9

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.101
D30 [mm]	0.0709
D10 [mm]	0.00627
Coefficient of Uniformity	16
Coefficient of Curvature	7.9

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	17/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

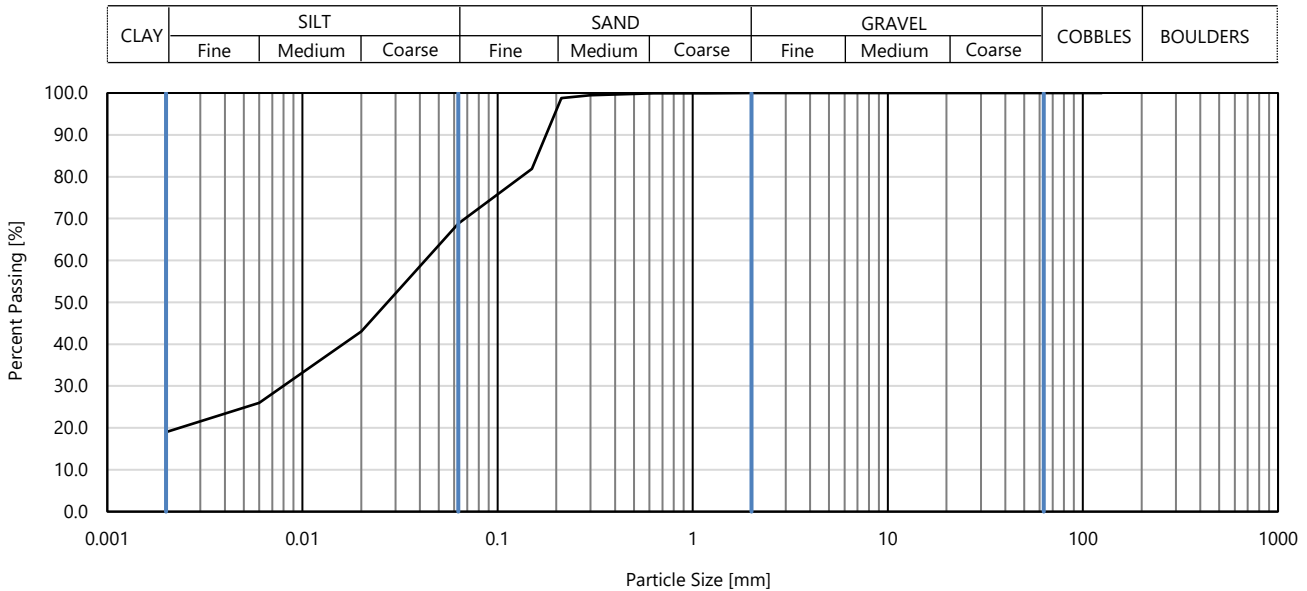
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	43
90.0	100	0.00600	26
75.0	100	0.00200	19
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	82		
0.0630	69		

Dry Mass of Sample [g]	917
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	31.2
Silt	50.0
Clay	18.8

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0428
D30 [mm]	0.00808
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

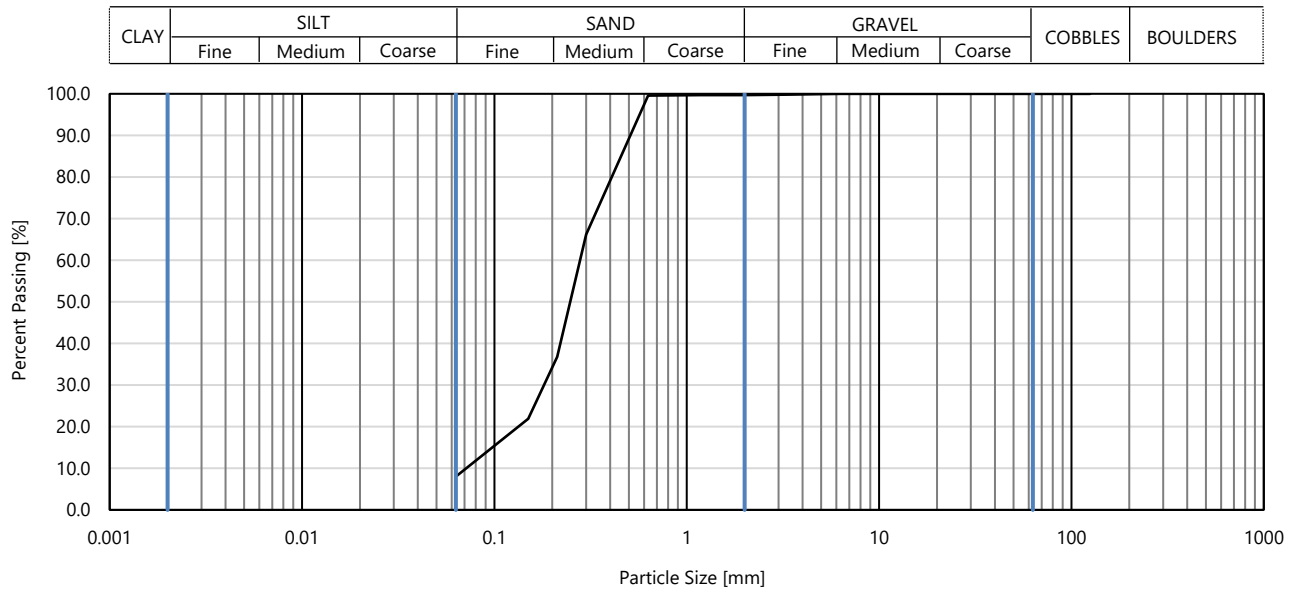
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.30
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	66		
0.212	37		
0.150	22		
0.0630	8		

Dry Mass of Sample [g]	1249
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	91.8
Fines <0.063mm	8.0

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.279
D30 [mm]	0.181
D10 [mm]	0.0715
Coefficient of Uniformity	3.9
Coefficient of Curvature	1.6

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

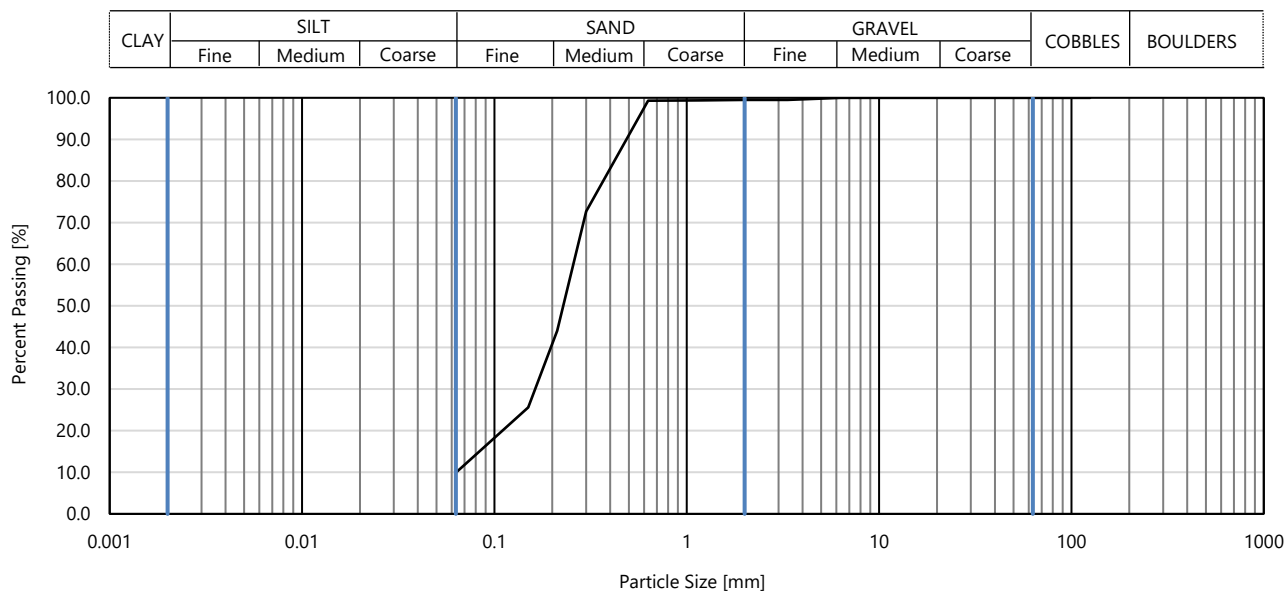
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.30
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	34



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	73		
0.212	44		
0.150	26		
0.0630	10		

Dry Mass of Sample [g]	1710
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.5
Sand	89.6
Fines <0.063mm	9.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.257
D30 [mm]	0.163
D10 [mm]	0.0634
Coefficient of Uniformity	4.1
Coefficient of Curvature	1.6

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

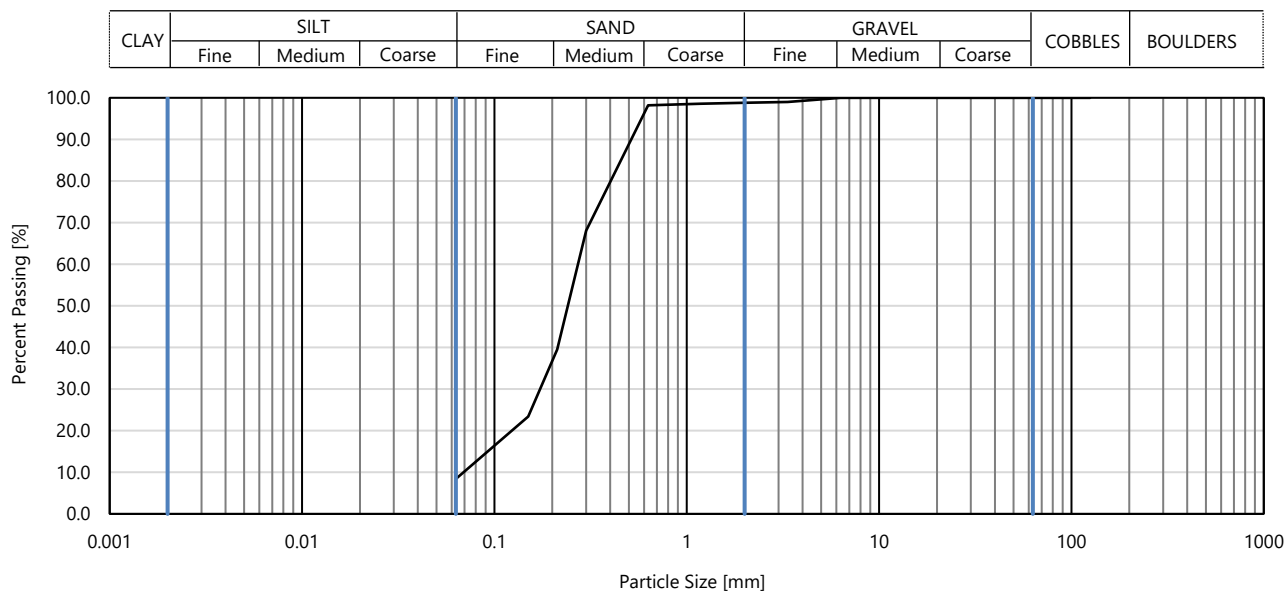
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.30
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	99		
0.630	98		
0.300	68		
0.212	40		
0.150	23		
0.0630	8		

Dry Mass of Sample [g]	860
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.2
Sand	90.3
Fines <0.063mm	8.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.272
D30 [mm]	0.173
D10 [mm]	0.069
Coefficient of Uniformity	3.9
Coefficient of Curvature	1.6

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

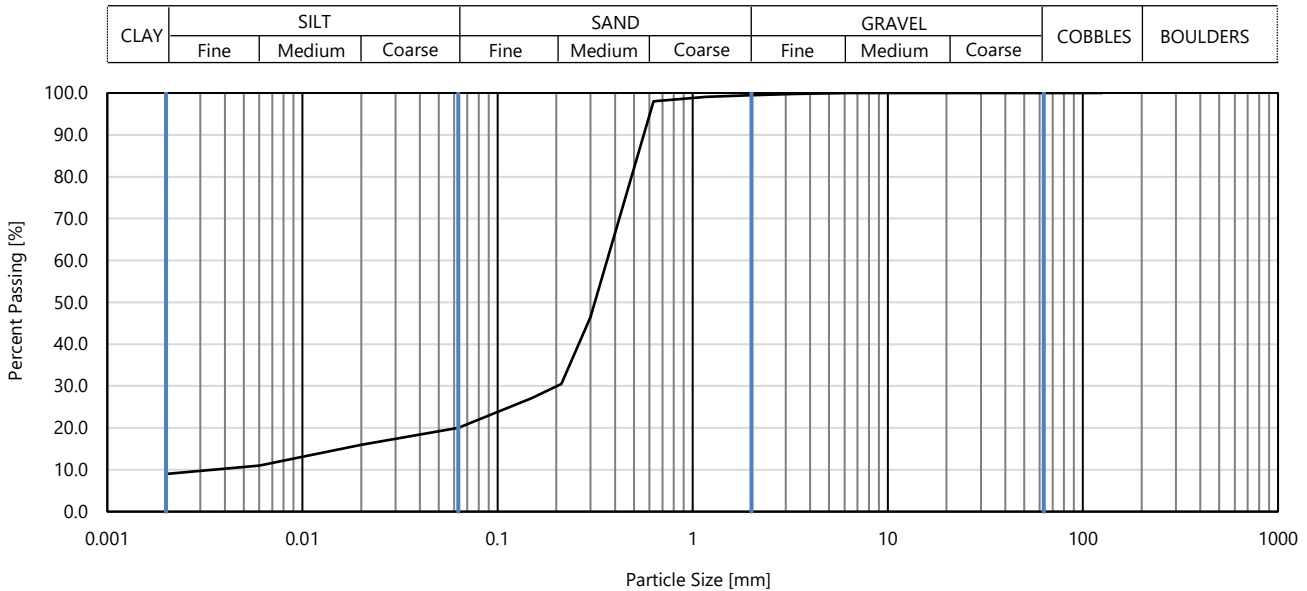
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.30
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	40



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	16
90.0	100	0.00600	11
75.0	100	0.00200	9
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	98		
0.300	47		
0.212	31		
0.150	27		
0.0630	20		

Dry Mass of Sample [g]	1223
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.5
Sand	79.5
Silt	11.3
Clay	8.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.365
D30 [mm]	0.201
D10 [mm]	0.00353
Coefficient of Uniformity	100
Coefficient of Curvature	31

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

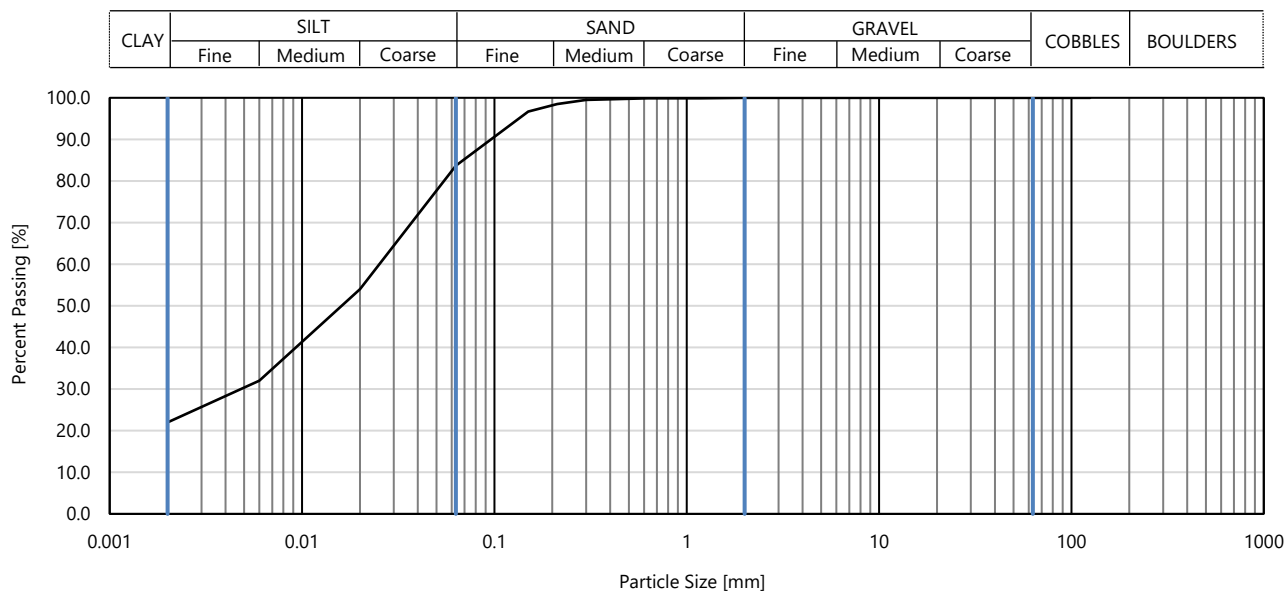
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	54
90.0	100	0.00600	32
75.0	100	0.00200	22
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	99		
0.150	97		
0.0630	84		

Dry Mass of Sample [g]	336
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	16.3
Silt	62.0
Clay	21.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0254
D30 [mm]	0.00507
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

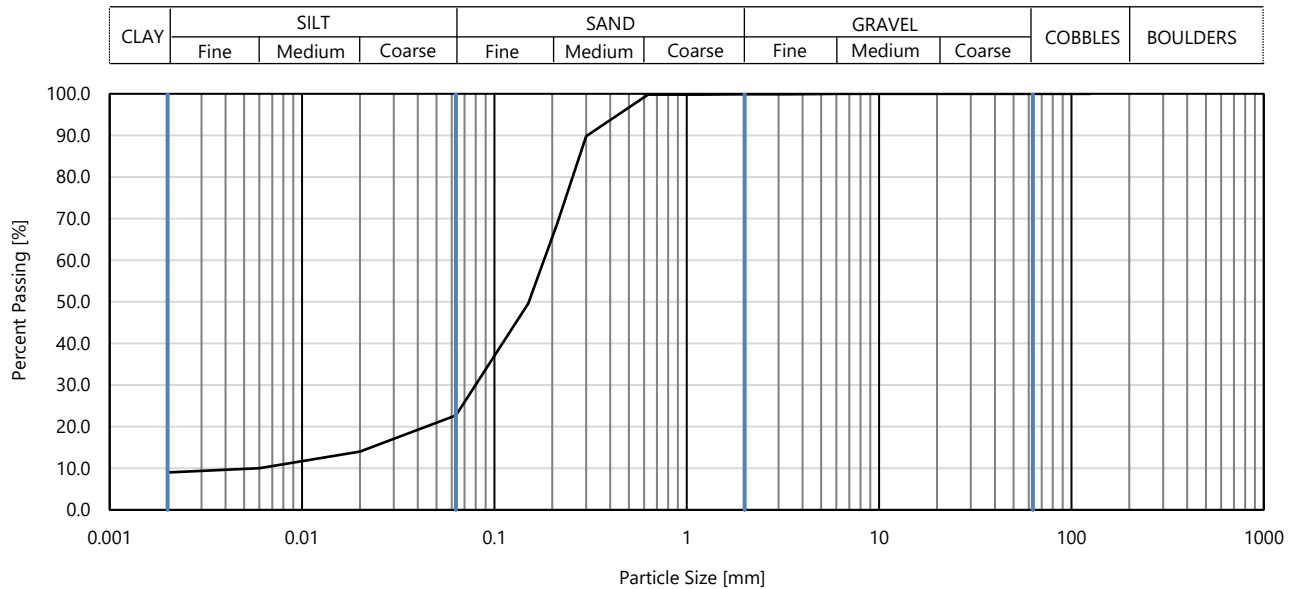
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	10
75.0	100	0.00200	9
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	90		
0.212	69		
0.150	50		
0.0630	23		

Dry Mass of Sample [g]	438
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	77.2
Silt	14.1
Clay	8.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.181
D30 [mm]	0.0797
D10 [mm]	0.00516
Coefficient of Uniformity	35
Coefficient of Curvature	6.8

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

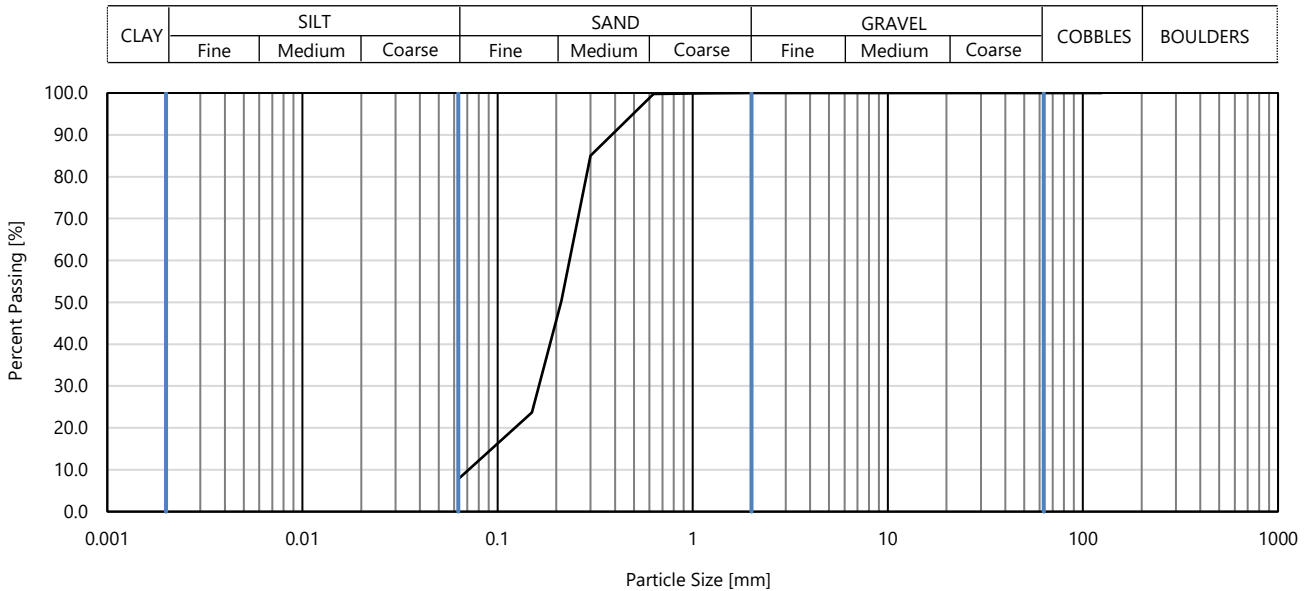
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	85		
0.212	50		
0.150	24		
0.0630	8		

Dry Mass of Sample [g]	920
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	92.2
Fines <0.063mm	7.8

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.234
D30 [mm]	0.163
D10 [mm]	0.071
Coefficient of Uniformity	3.3
Coefficient of Curvature	1.6

Issue Date	14/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	14/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

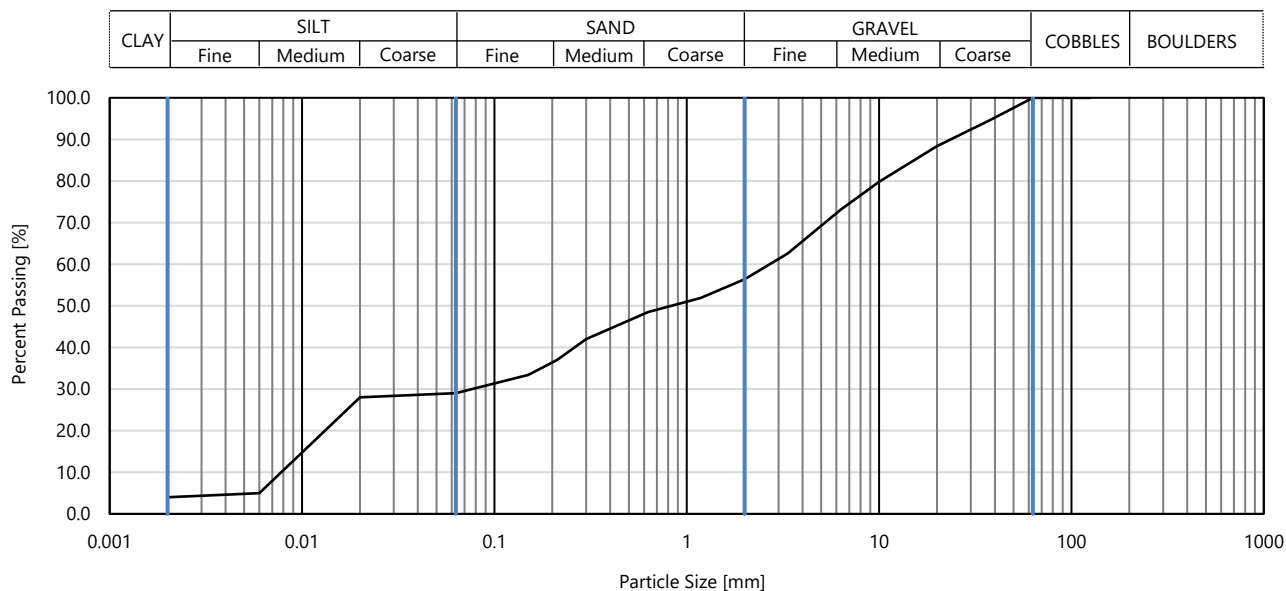
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Brown very sandy very silty GRAVEL	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	40



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	28
90.0	100	0.00600	5
75.0	100	0.00200	4
63.0	100		
37.5	95		
20.0	88		
10.0	80		
6.30	73		
3.35	63		
2.00	56		
1.18	52		
0.630	49		
0.300	42		
0.212	37		
0.150	33		
0.0630	29		

Dry Mass of Sample [g]	6012
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	43.6
Sand	27.4
Silt	24.7
Clay	4.3

Grading Analysis	
D100 [mm]	63
D60 [mm]	2.7
D30 [mm]	0.0774
D10 [mm]	0.00766
Coefficient of Uniformity	350
Coefficient of Curvature	0.29

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

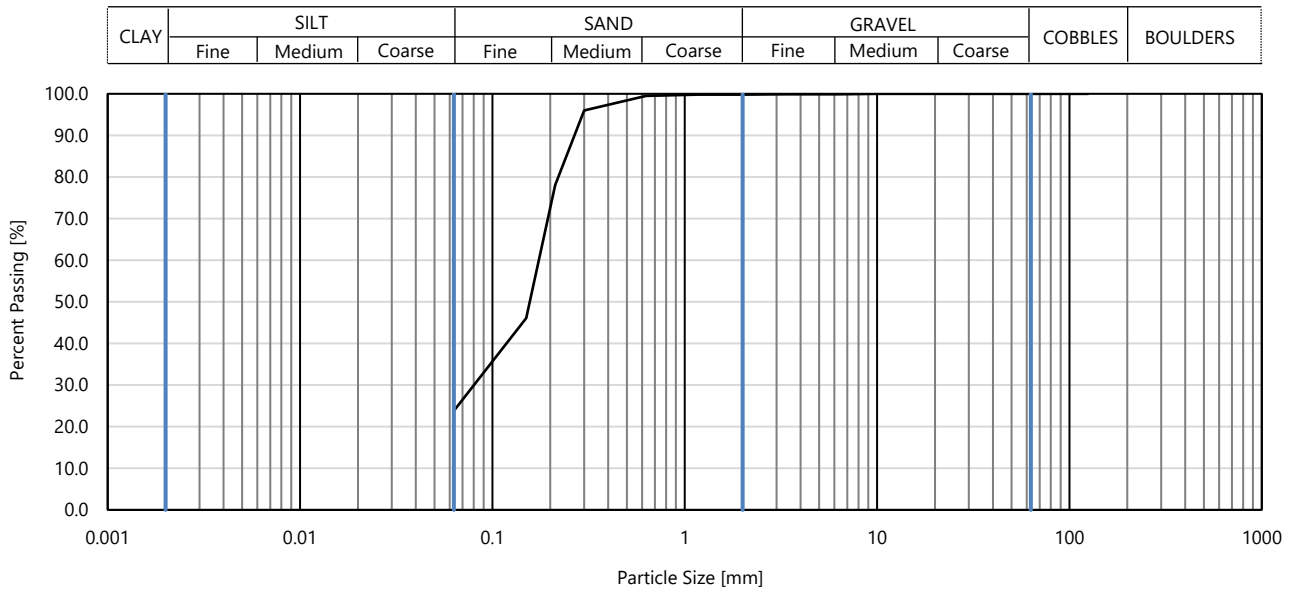
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.70
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	12



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	96		
0.212	78		
0.150	46		
0.0630	24		

Dry Mass of Sample [g]	1063
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	76.0
Fines <0.063mm	23.8

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.174
D30 [mm]	0.0803
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

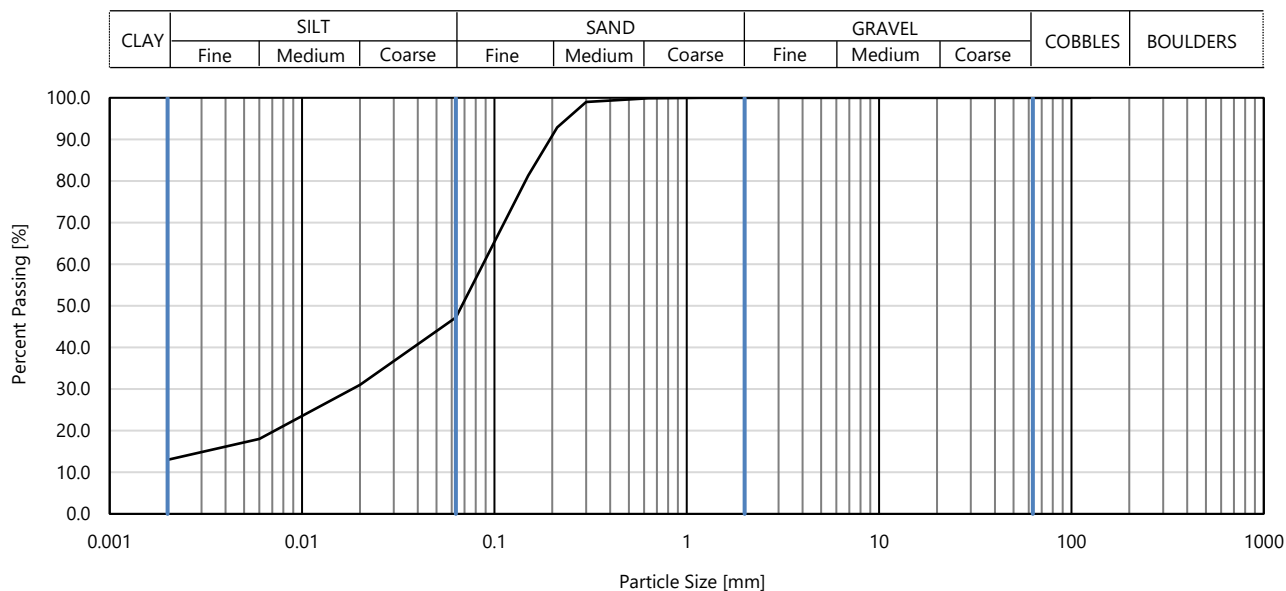
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	31
90.0	100	0.00600	18
75.0	100	0.00200	13
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	93		
0.150	81		
0.0630	47		

Dry Mass of Sample [g]	906
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	52.8
Silt	34.1
Clay	13.1

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0873
D30 [mm]	0.0185
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

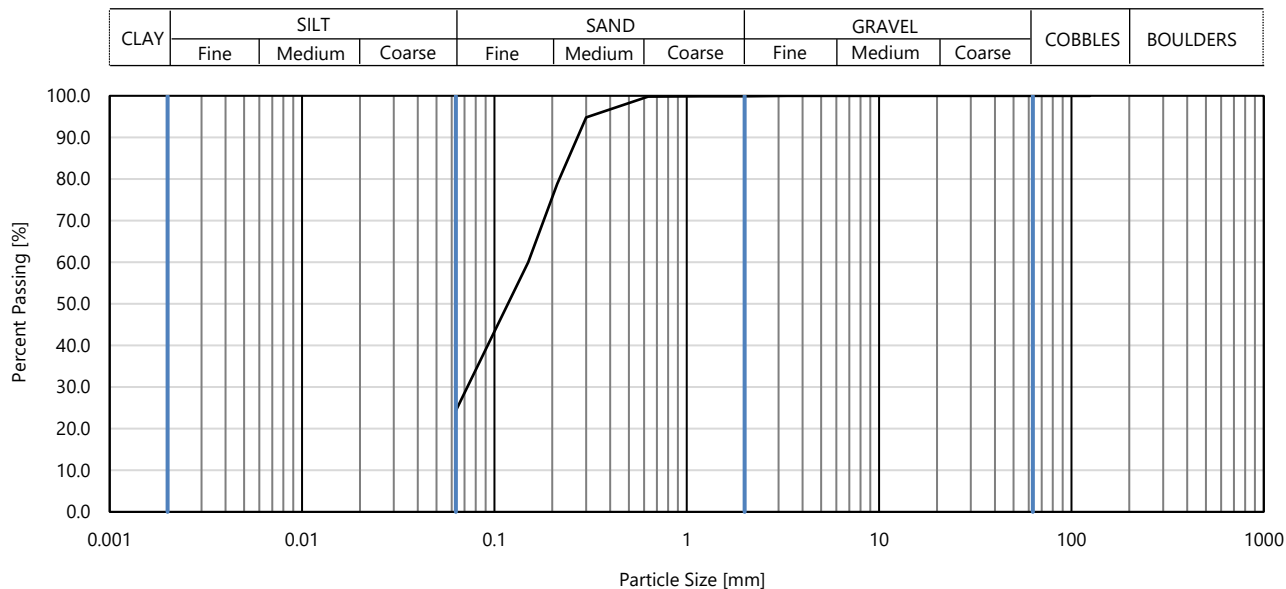
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.50
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	95		
0.212	79		
0.150	60		
0.0630	24		

Dry Mass of Sample [g]	930
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	75.6
Fines <0.063mm	24.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.15
D30 [mm]	0.0724
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

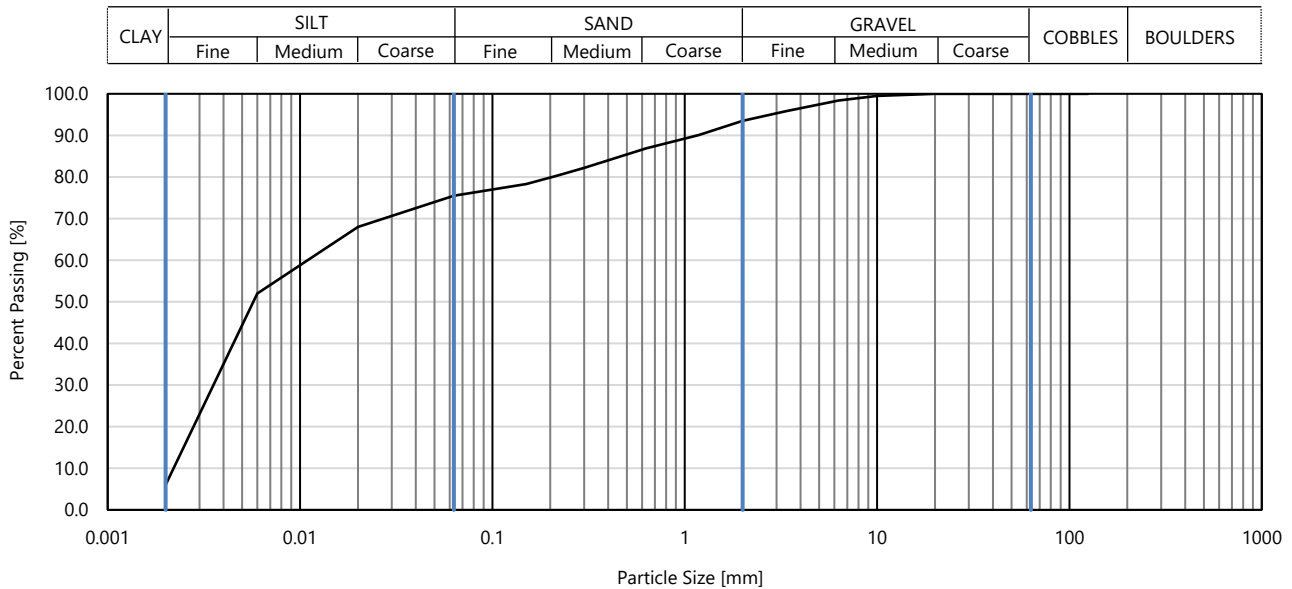
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.00
Specimen Description	Grey slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	68
90.0	100	0.00600	52
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	98		
3.35	96		
2.00	94		
1.18	90		
0.630	87		
0.300	82		
0.212	80		
0.150	78		
0.0630	76		

Dry Mass of Sample [g]	6803
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	6.5
Sand	17.9
Silt	69.9
Clay	5.7

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.0111
D30 [mm]	0.00356
D10 [mm]	0.00221
Coefficient of Uniformity	5
Coefficient of Curvature	0.51

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

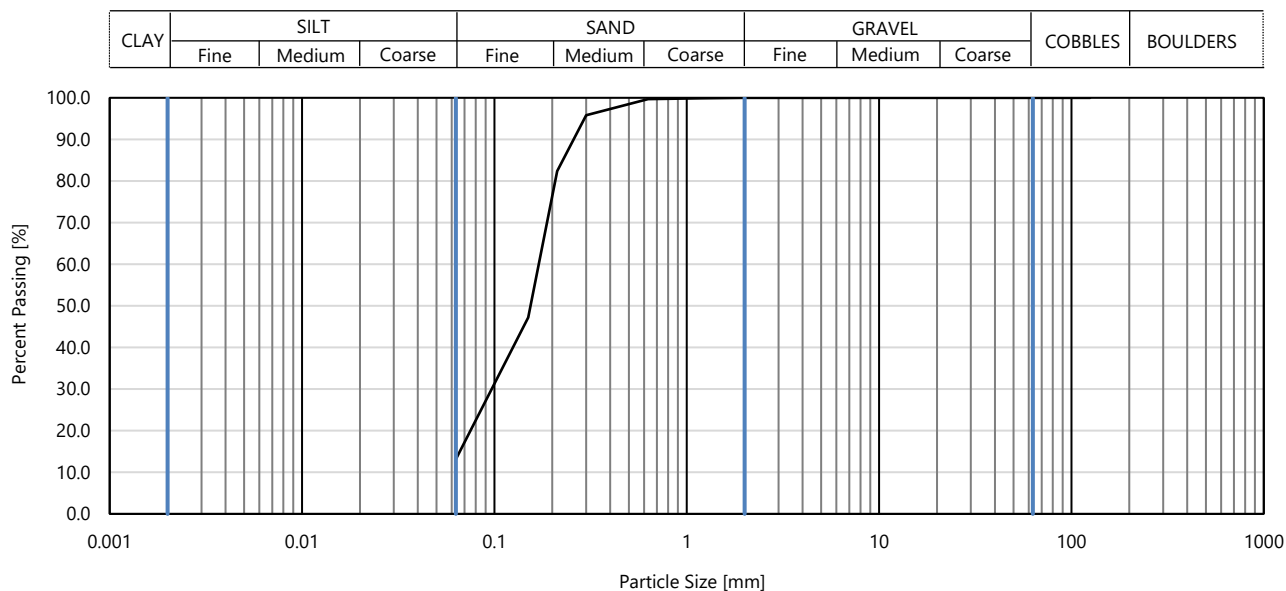
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	18



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	96		
0.212	82		
0.150	47		
0.0630	13		

Dry Mass of Sample [g]	873
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	86.8
Fines <0.063mm	13.1

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.17
D30 [mm]	0.0968
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

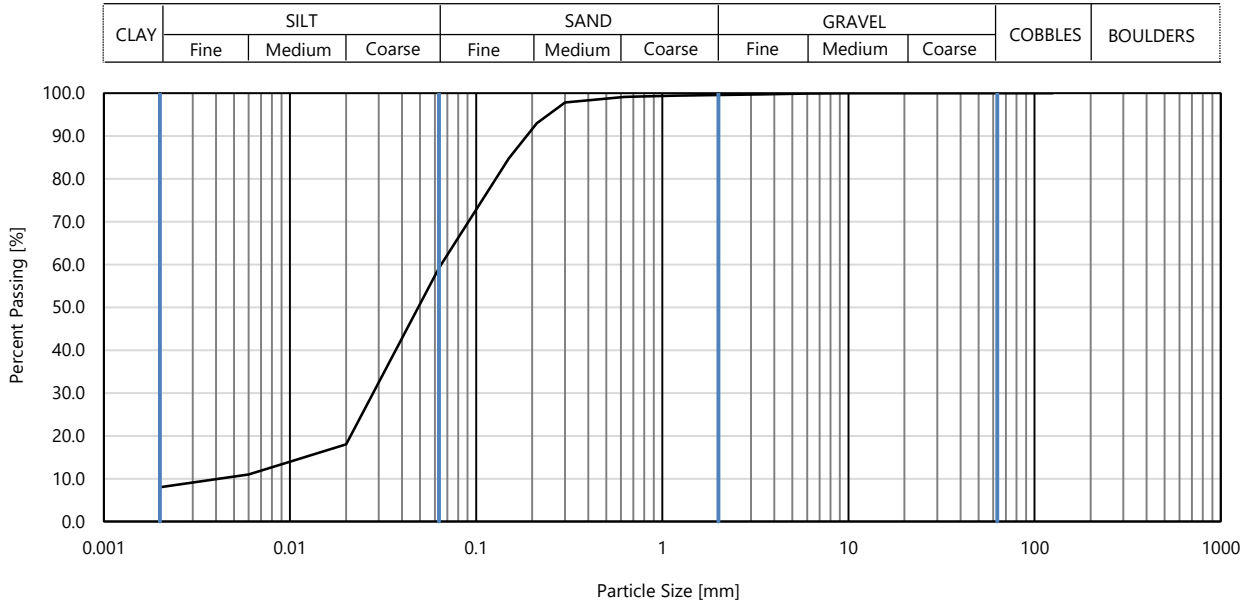
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly sandy SILT	Sample Type	D
Specimen Reference	Specimen Depth [m]	Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	18
90.0	100	0.00600	11
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	98		
0.212	93		
0.150	85		
0.0630	59		

Dry Mass of Sample [g]	363
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.4
Sand	40.3
Silt	51.7
Clay	7.6

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.0646
D30 [mm]	0.0279
D10 [mm]	0.0048
Coefficient of Uniformity	13
Coefficient of Curvature	2.5

Issue Date	30/11/2022	Certificate Reference	Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	30/11/2022
Remarks:				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

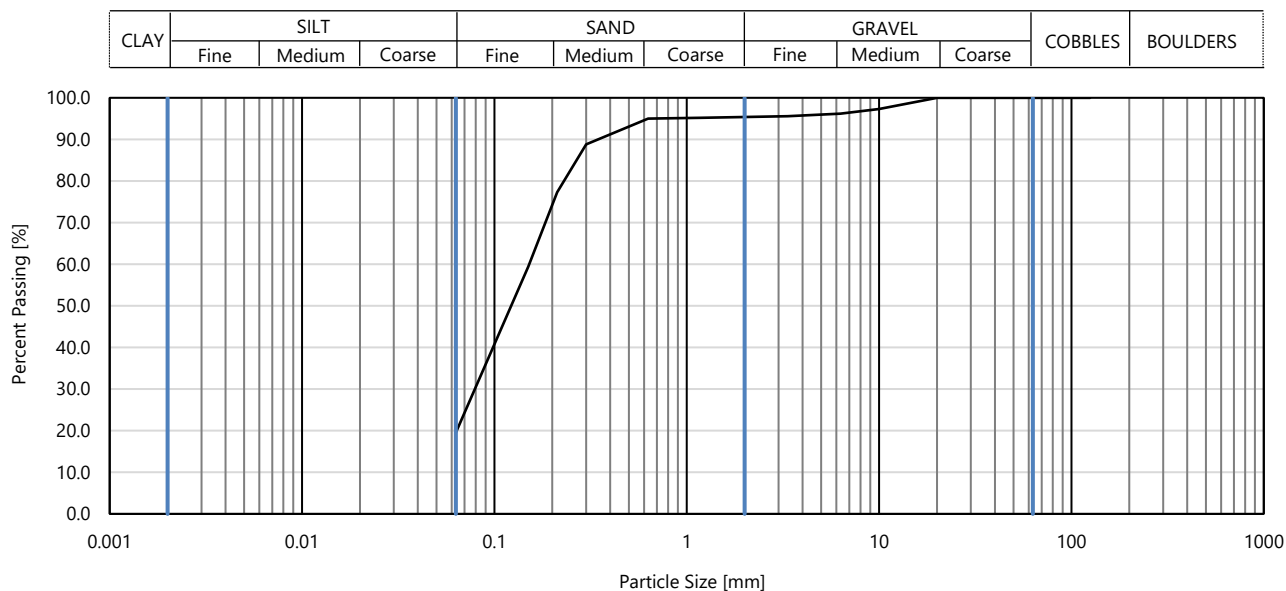
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	97		
6.30	96		
3.35	96		
2.00	95		
1.18	95		
0.630	95		
0.300	89		
0.212	77		
0.150	59		
0.0630	20		

Dry Mass of Sample [g]	389
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	4.6
Sand	76.0
Fines <0.063mm	19.5

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.152
D30 [mm]	0.0792
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

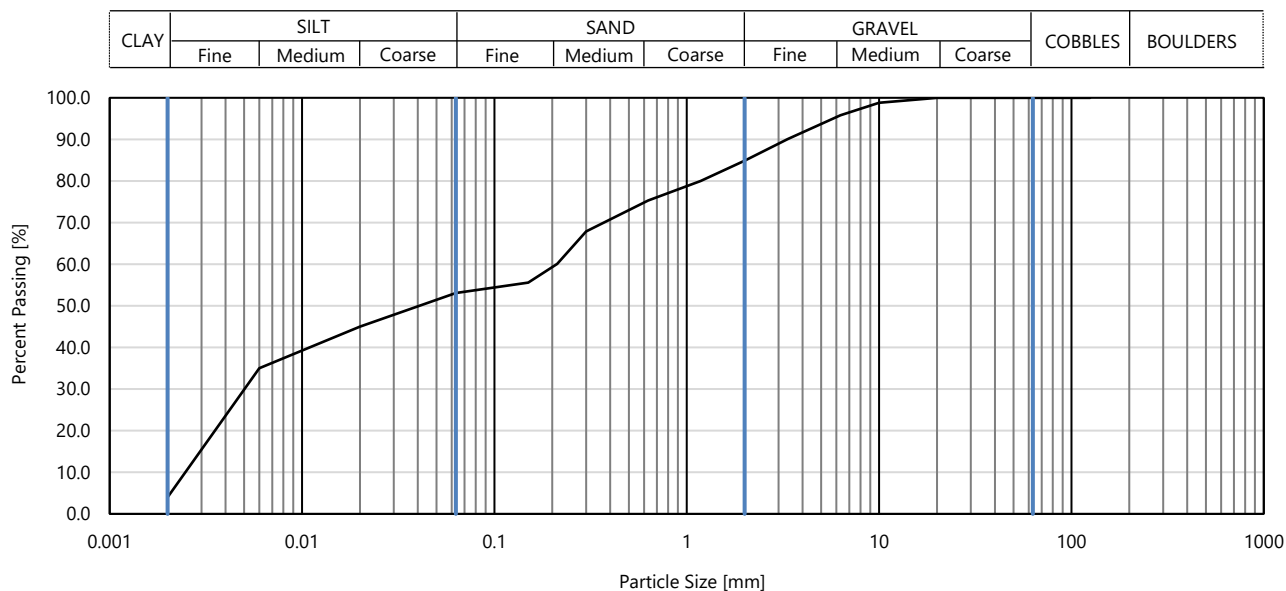
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.10
Specimen Description	Brown slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	38



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	45
90.0	100	0.00600	35
75.0	100	0.00200	4
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	96		
3.35	90		
2.00	85		
1.18	80		
0.630	75		
0.300	68		
0.212	60		
0.150	56		
0.0630	53		

Dry Mass of Sample [g]	1758
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	15.1
Sand	31.8
Silt	49.0
Clay	4.1

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.21
D30 [mm]	0.00506
D10 [mm]	0.00247
Coefficient of Uniformity	85
Coefficient of Curvature	0.049

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

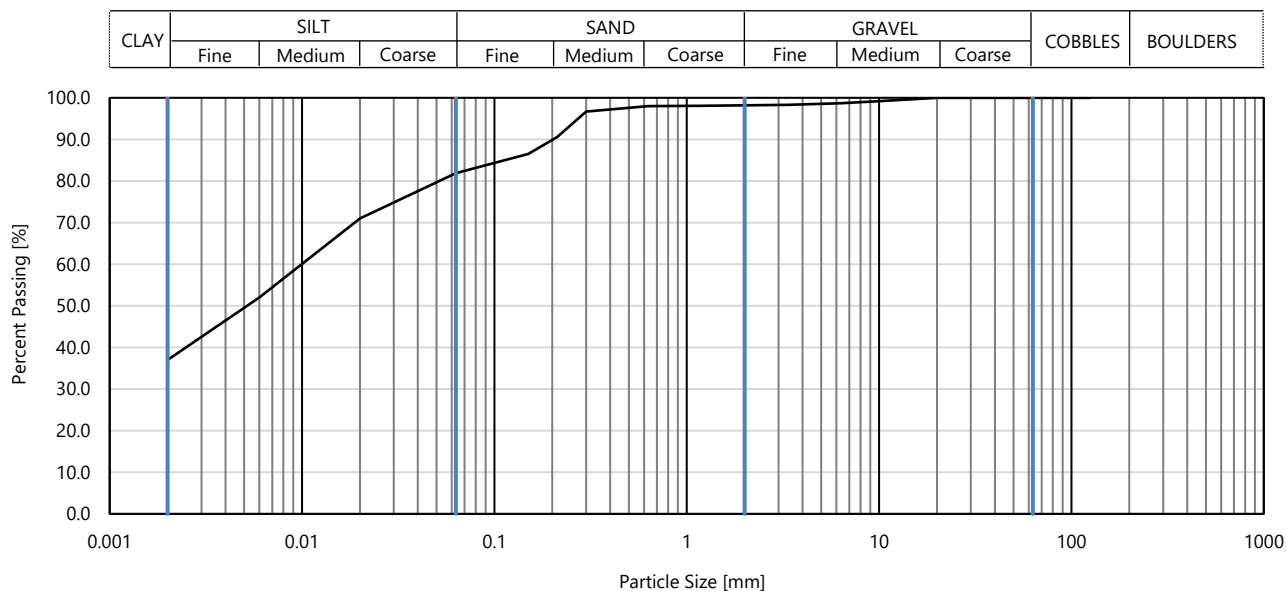
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly gravelly slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	71
90.0	100	0.00600	52
75.0	100	0.00200	37
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	99		
3.35	98		
2.00	98		
1.18	98		
0.630	98		
0.300	97		
0.212	91		
0.150	87		
0.0630	82		

Dry Mass of Sample [g]	1527
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.8
Sand	16.2
Silt	45.3
Clay	36.7

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.00994
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

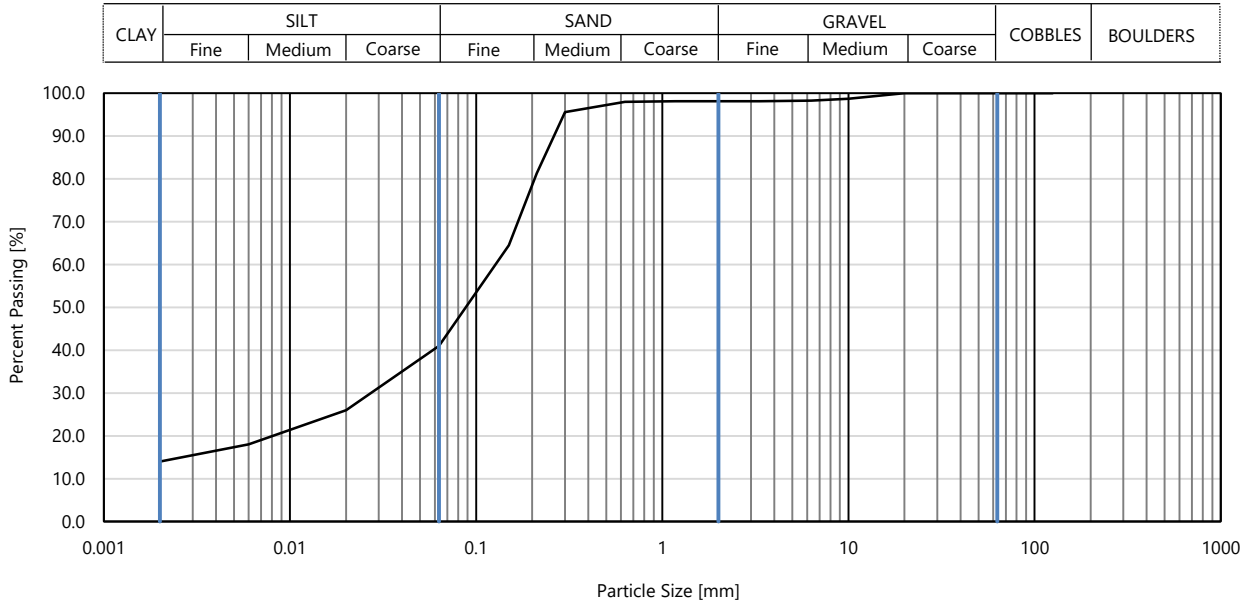
Determination of Particle Size Distribution



BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	19



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	26
90.0	100	0.00600	18
75.0	100	0.00200	14
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	98		
3.35	98		
2.00	98		
1.18	98		
0.630	98		
0.300	96		
0.212	81		
0.150	65		
0.0630	41		

Dry Mass of Sample [g]	872
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.9
Sand	57.1
Silt	27.1
Clay	13.9

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.127
D30 [mm]	0.0266
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

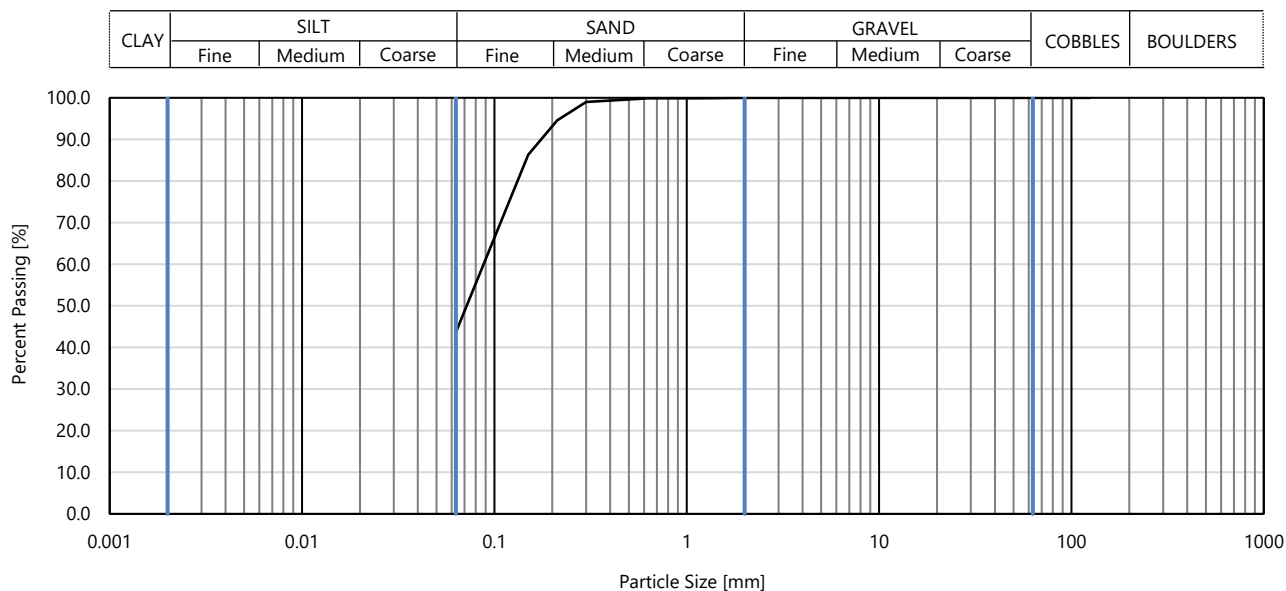
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.80
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	95		
0.150	86		
0.0630	44		

Dry Mass of Sample [g]	878
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	56.3
Fines <0.063mm	43.6

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0879
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

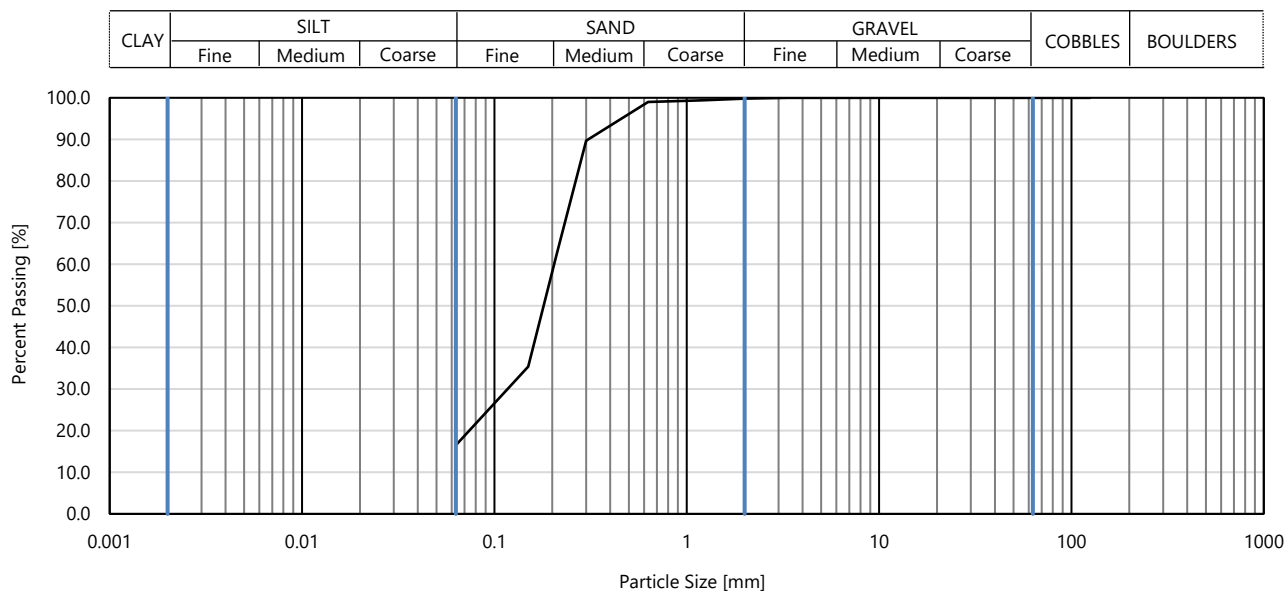
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	90		
0.212	63		
0.150	35		
0.0630	17		

Dry Mass of Sample [g]	1009
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	83.3
Fines <0.063mm	16.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.204
D30 [mm]	0.117
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

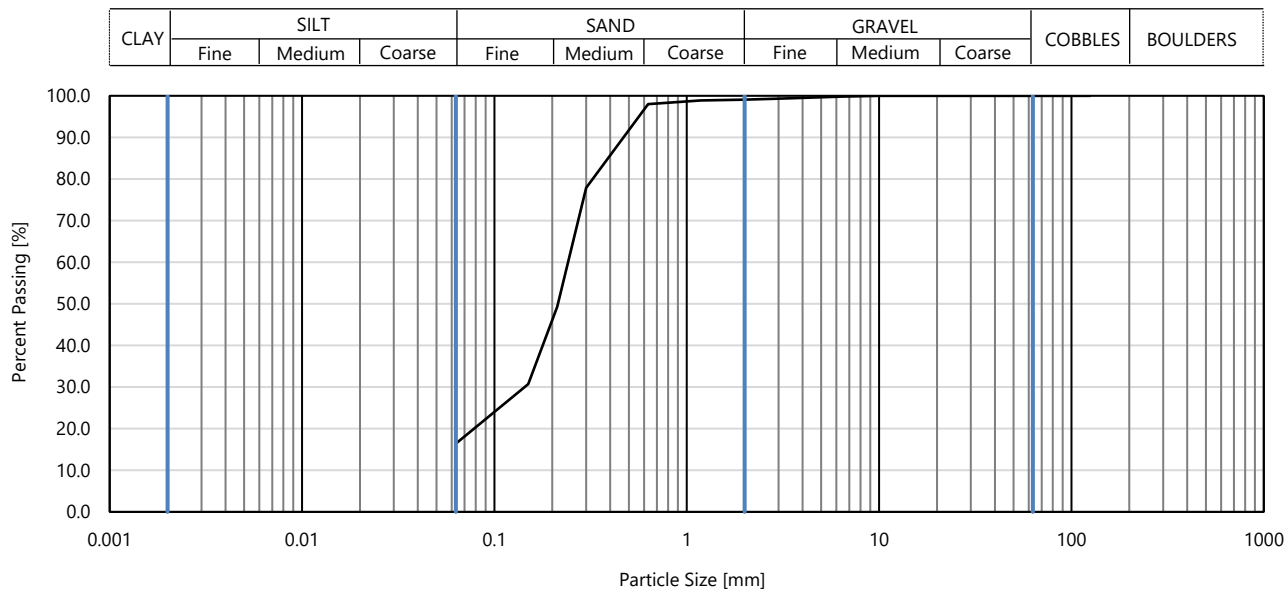
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.50
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	99		
0.630	98		
0.300	78		
0.212	49		
0.150	31		
0.0630	16		

Dry Mass of Sample [g]	925
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.9
Sand	82.7
Fines <0.063mm	16.4

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.241
D30 [mm]	0.144
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

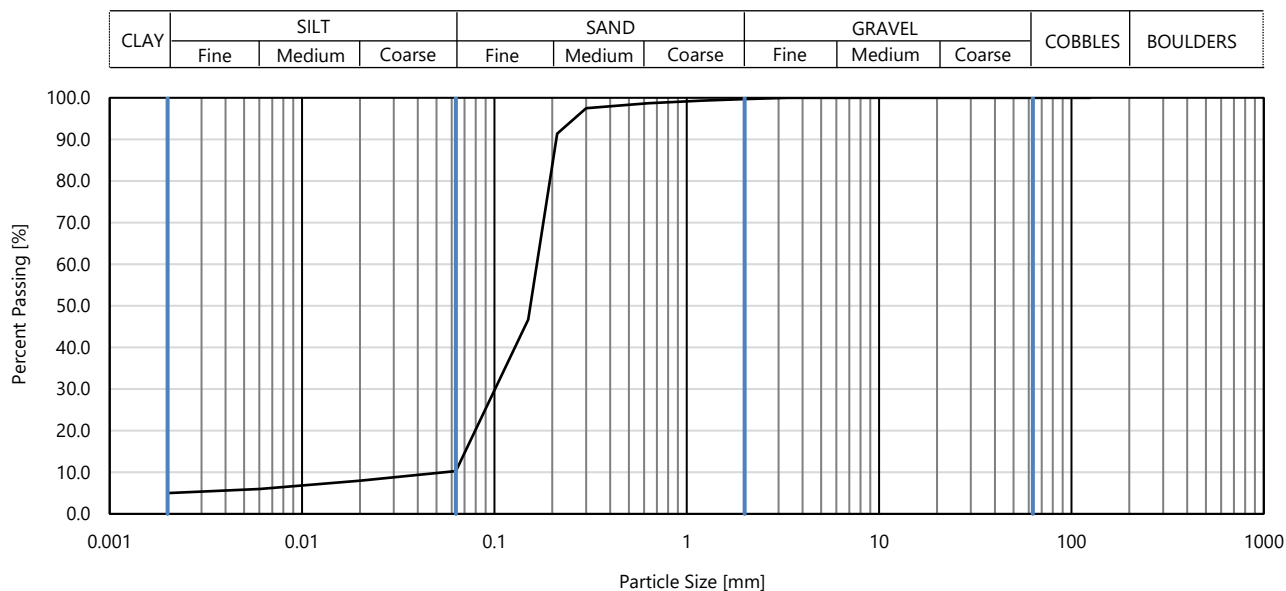
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	8
90.0	100	0.00600	6
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	98		
0.212	91		
0.150	47		
0.0630	10		

Dry Mass of Sample [g]	675
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	89.4
Silt	5.1
Clay	5.2

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.166
D30 [mm]	0.101
D10 [mm]	0.0549
Coefficient of Uniformity	3
Coefficient of Curvature	1.1

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

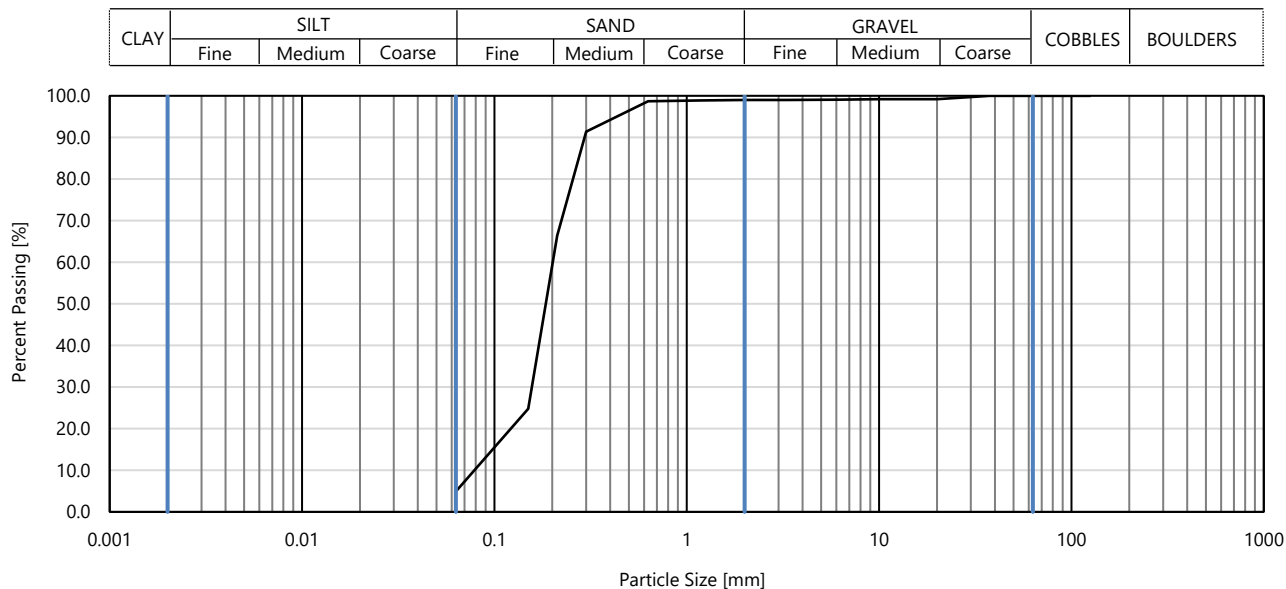
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.70
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	99		
10.0	99		
6.30	99		
3.35	99		
2.00	99		
1.18	99		
0.630	99		
0.300	91		
0.212	66		
0.150	25		
0.0630	5		

Dry Mass of Sample [g]	2477
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.0
Sand	94.1
Fines <0.063mm	4.9

Grading Analysis	
D100 [mm]	37.5
D60 [mm]	0.201
D30 [mm]	0.157
D10 [mm]	0.0787
Coefficient of Uniformity	2.6
Coefficient of Curvature	1.6

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

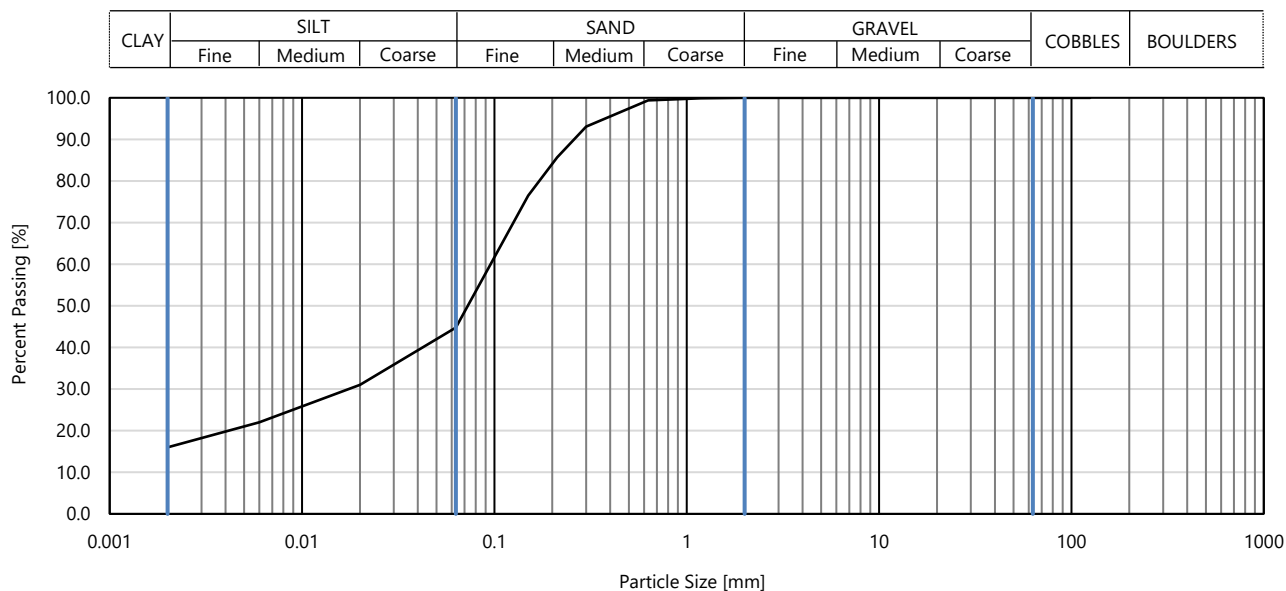
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	31
90.0	100	0.00600	22
75.0	100	0.00200	16
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	93		
0.212	86		
0.150	77		
0.0630	45		

Dry Mass of Sample [g]	749
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	55.2
Silt	29.0
Clay	15.8

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0955
D30 [mm]	0.0181
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

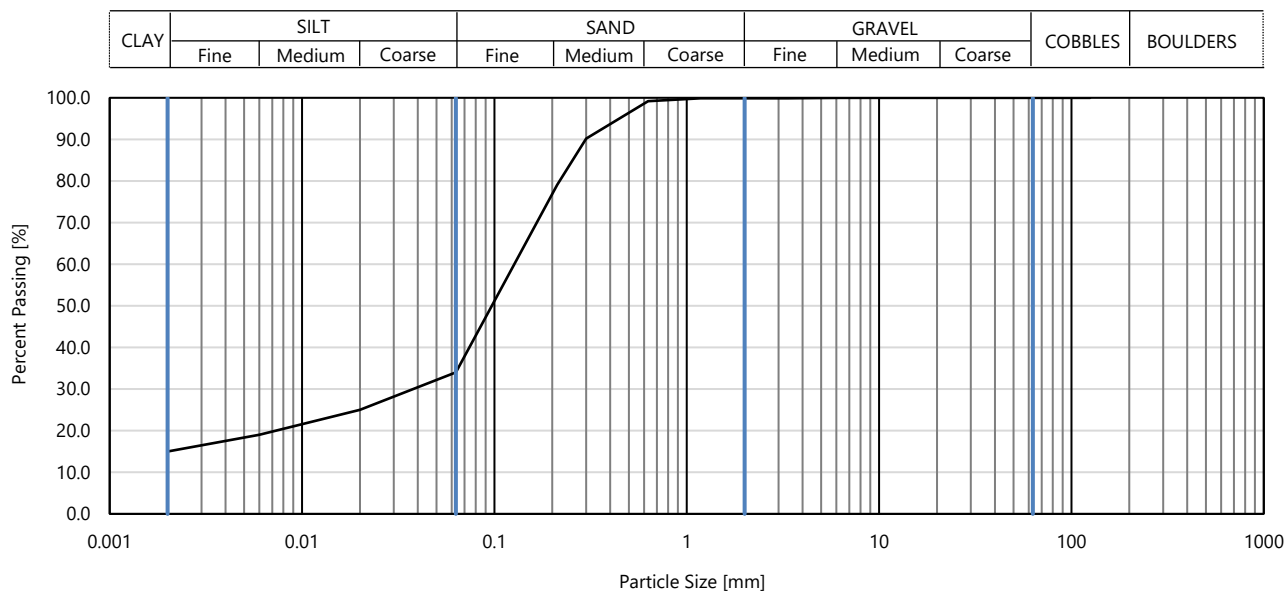
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	25
90.0	100	0.00600	19
75.0	100	0.00200	15
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	90		
0.212	79		
0.150	66		
0.0630	34		

Dry Mass of Sample [g]	743
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	65.9
Silt	18.6
Clay	15.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.127
D30 [mm]	0.0372
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

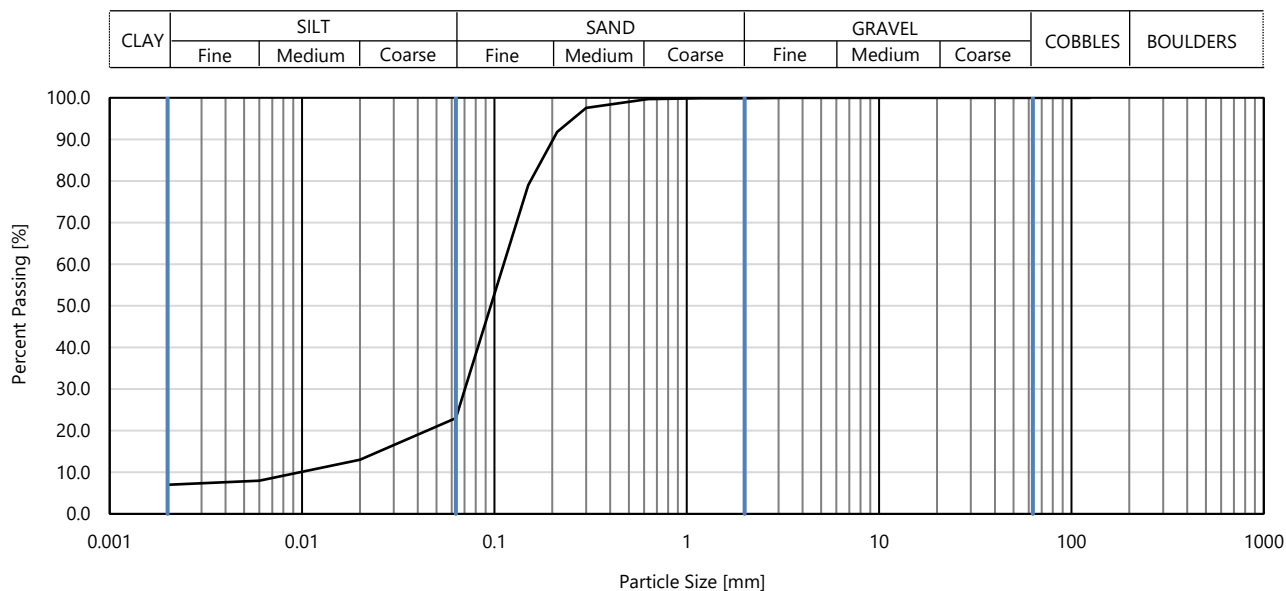
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.20
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	13
90.0	100	0.00600	8
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	92		
0.150	79		
0.0630	23		

Dry Mass of Sample [g]	646
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	76.9
Silt	16.2
Clay	6.8

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.112
D30 [mm]	0.0702
D10 [mm]	0.00953
Coefficient of Uniformity	12
Coefficient of Curvature	4.6

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

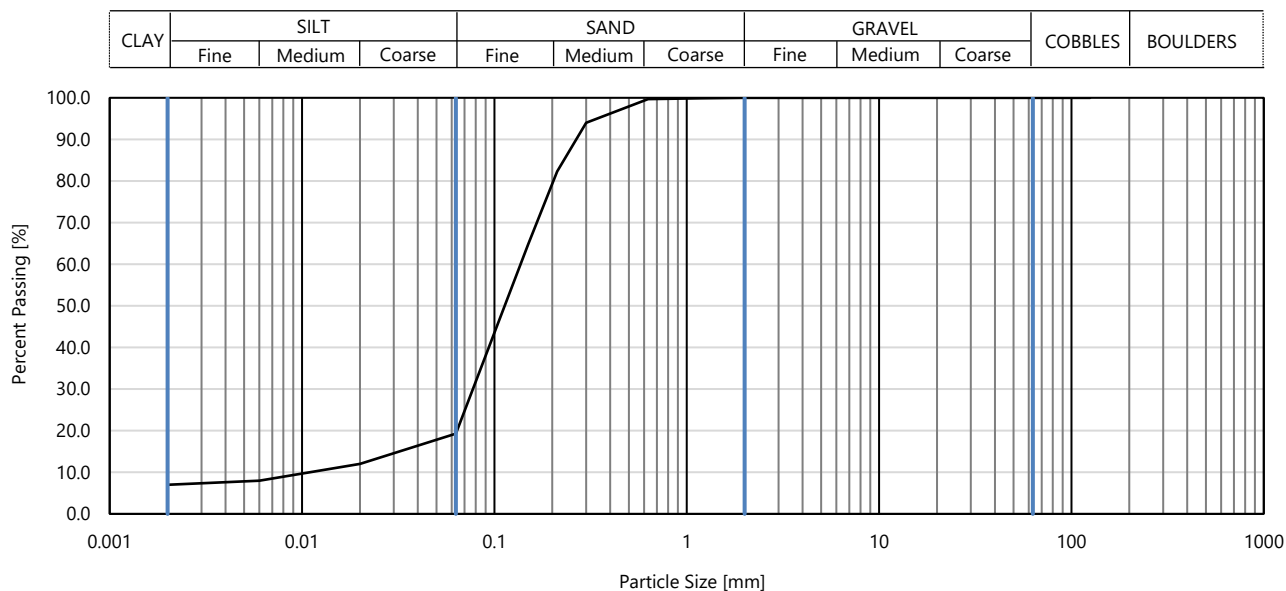
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.30
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	12
90.0	100	0.00600	8
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	94		
0.212	82		
0.150	65		
0.0630	19		

Dry Mass of Sample [g]	682
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	80.6
Silt	12.4
Clay	7.0

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.137
D30 [mm]	0.0772
D10 [mm]	0.0111
Coefficient of Uniformity	12
Coefficient of Curvature	3.9

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

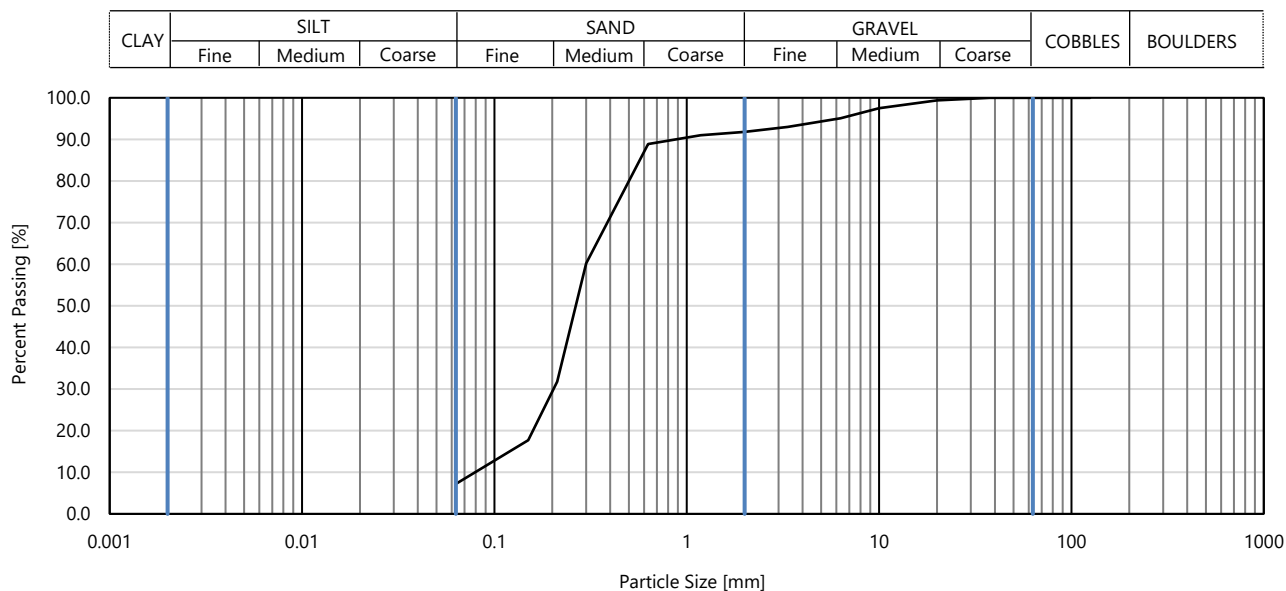
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.30
Specimen Description	Brown silty gravelly SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	99		
10.0	98		
6.30	95		
3.35	93		
2.00	92		
1.18	91		
0.630	89		
0.300	60		
0.212	32		
0.150	18		
0.0630	7		

Dry Mass of Sample [g]	2550
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	8.2
Sand	84.6
Fines <0.063mm	7.2

Grading Analysis	
D100 [mm]	37.5
D60 [mm]	0.299
D30 [mm]	0.203
D10 [mm]	0.0794
Coefficient of Uniformity	3.8
Coefficient of Curvature	1.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

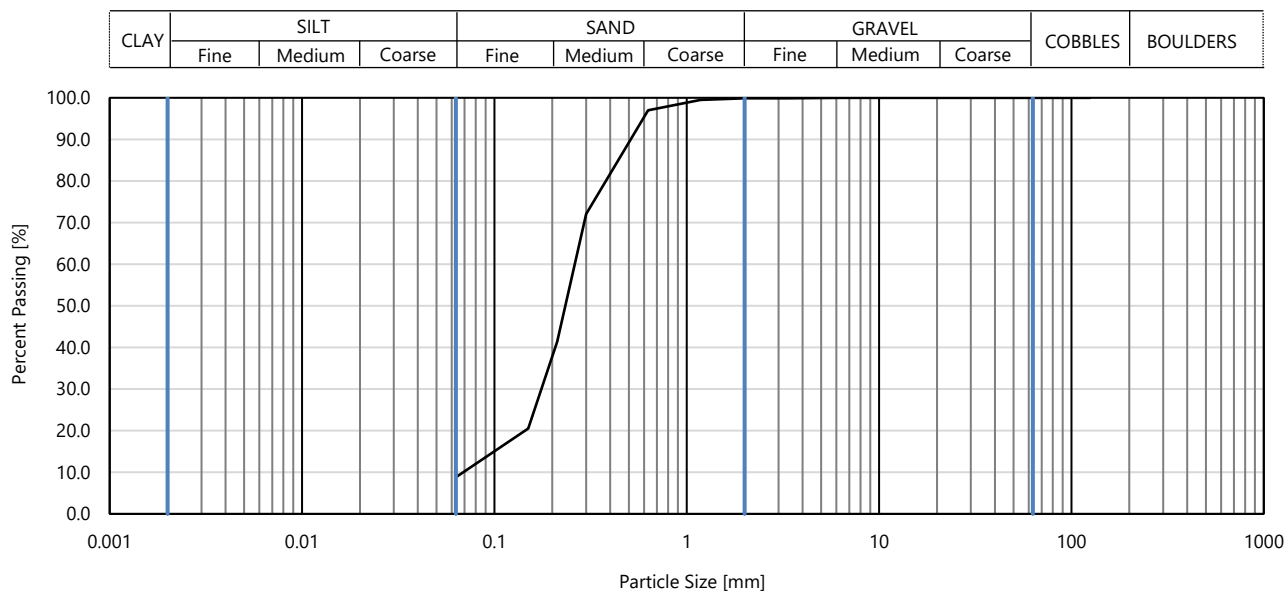
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	97		
0.300	72		
0.212	41		
0.150	21		
0.0630	9		

Dry Mass of Sample [g]	932
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	91.1
Fines <0.063mm	8.8

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.262
D30 [mm]	0.176
D10 [mm]	0.0689
Coefficient of Uniformity	3.8
Coefficient of Curvature	1.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

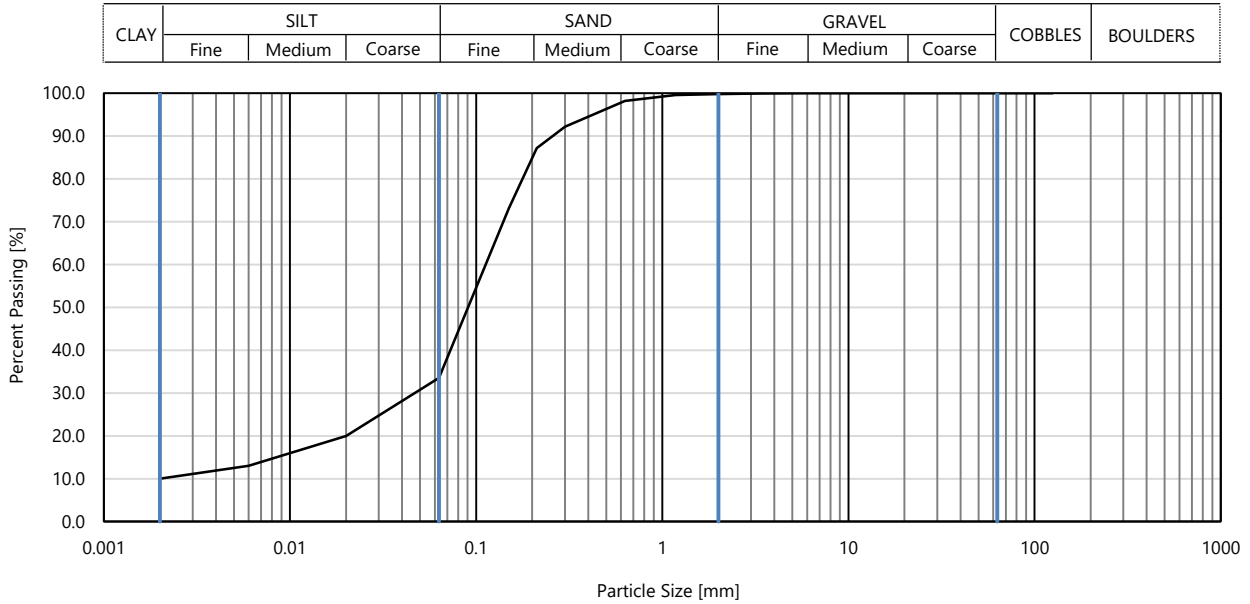
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.00
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	21



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	20
90.0	100	0.00600	13
75.0	100	0.00200	10
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	98		
0.300	92		
0.212	87		
0.150	73		
0.0630	34		

Dry Mass of Sample [g]	925
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	66.3
Silt	23.4
Clay	10.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.113
D30 [mm]	0.0469
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

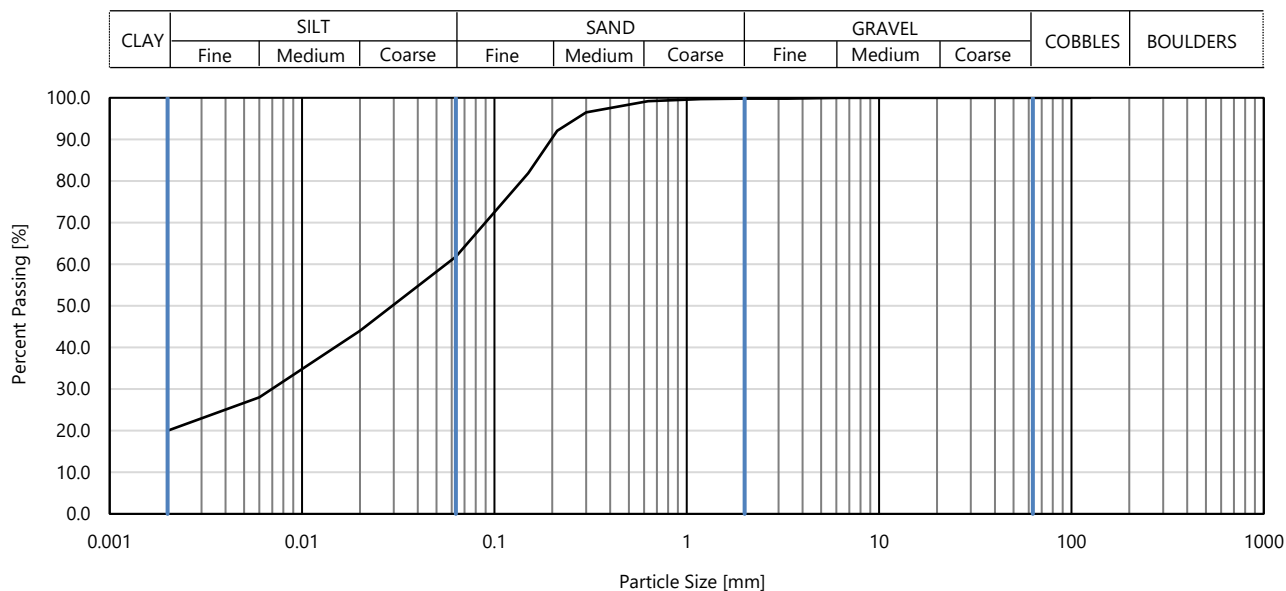
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	44
90.0	100	0.00600	28
75.0	100	0.00200	20
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	97		
0.212	92		
0.150	82		
0.0630	62		

Dry Mass of Sample [g]	806
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	38.0
Silt	41.9
Clay	19.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0562
D30 [mm]	0.00695
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

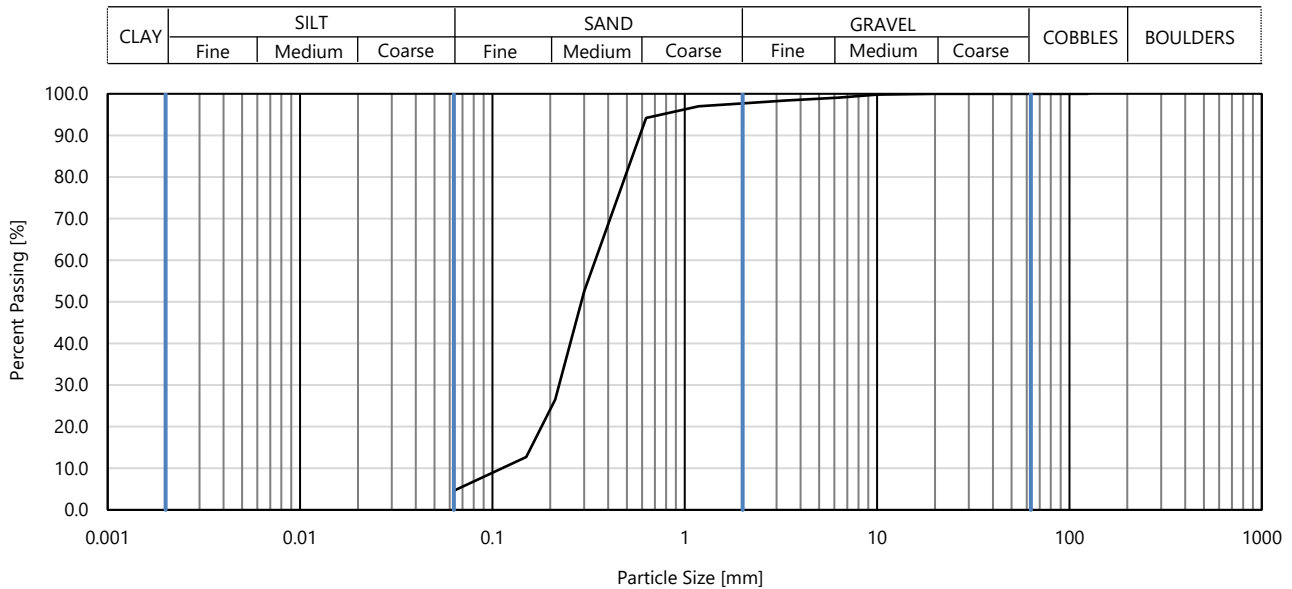
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	99		
3.35	98		
2.00	98		
1.18	97		
0.630	94		
0.300	53		
0.212	27		
0.150	13		
0.0630	5		

Dry Mass of Sample [g]	1154
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	2.3
Sand	93.1
Fines <0.063mm	4.6

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.343
D30 [mm]	0.222
D10 [mm]	0.113
Coefficient of Uniformity	3
Coefficient of Curvature	1.3

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

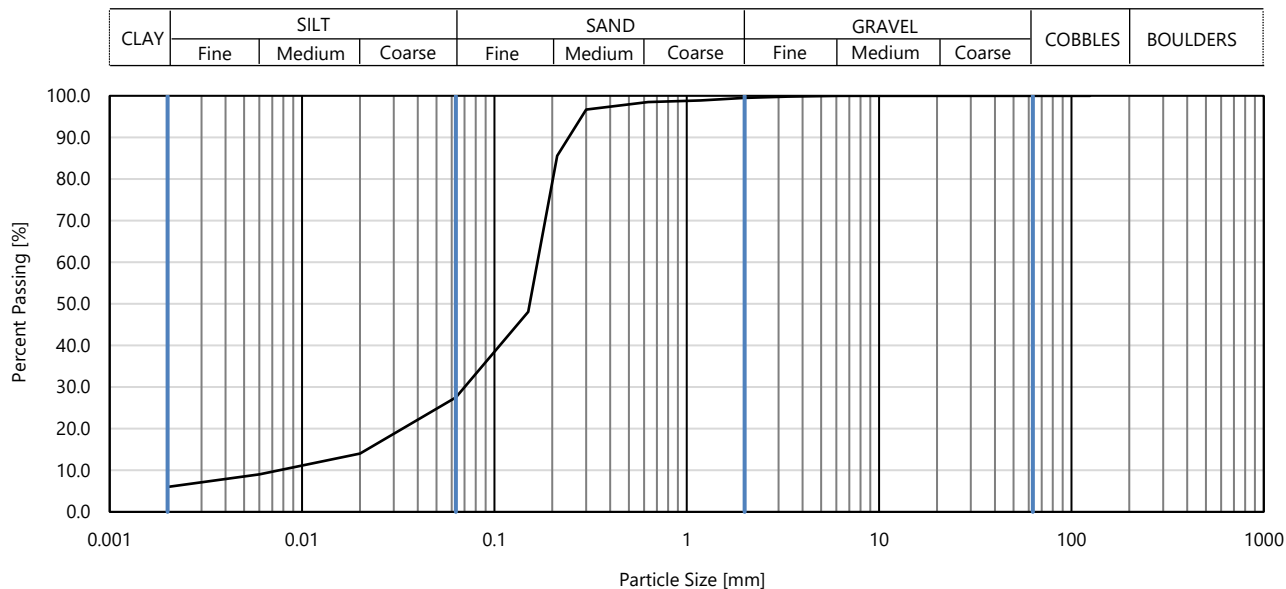
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.00
Specimen Description	Brown slightly gravelly very silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	8



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	9
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	97		
0.212	86		
0.150	48		
0.0630	28		

Dry Mass of Sample [g]	954
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.5
Sand	72.0
Silt	21.2
Clay	6.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.167
D30 [mm]	0.0701
D10 [mm]	0.00714
Coefficient of Uniformity	23
Coefficient of Curvature	4.1

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

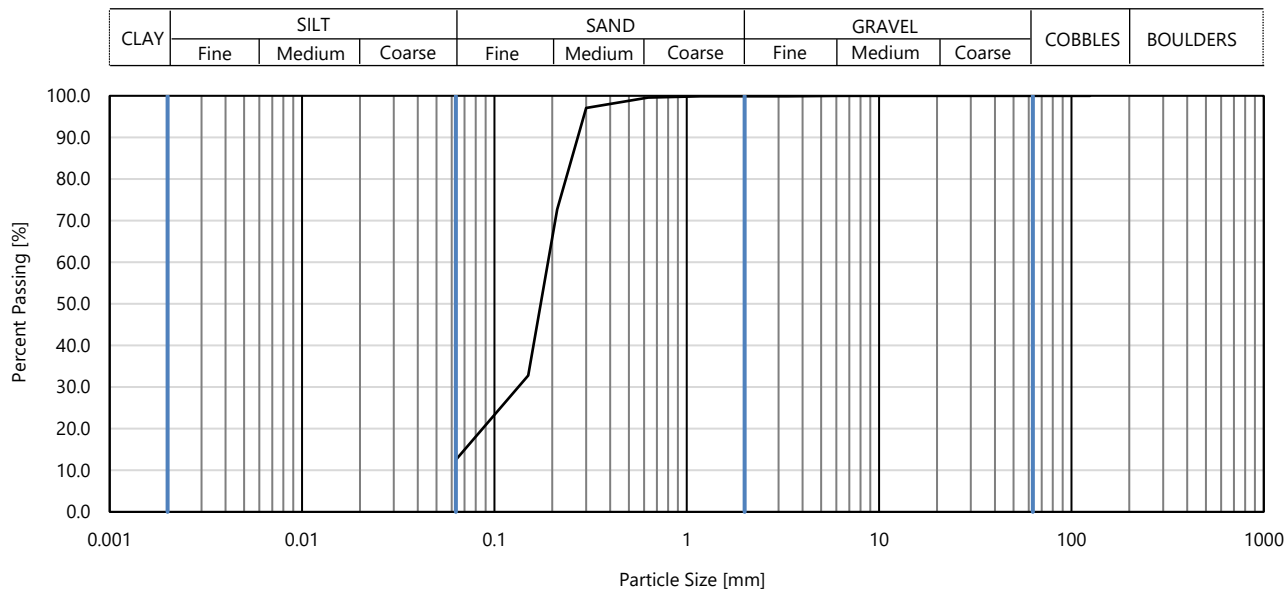
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	73		
0.150	33		
0.0630	13		

Dry Mass of Sample [g]	746
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	87.4
Fines <0.063mm	12.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.19
D30 [mm]	0.133
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

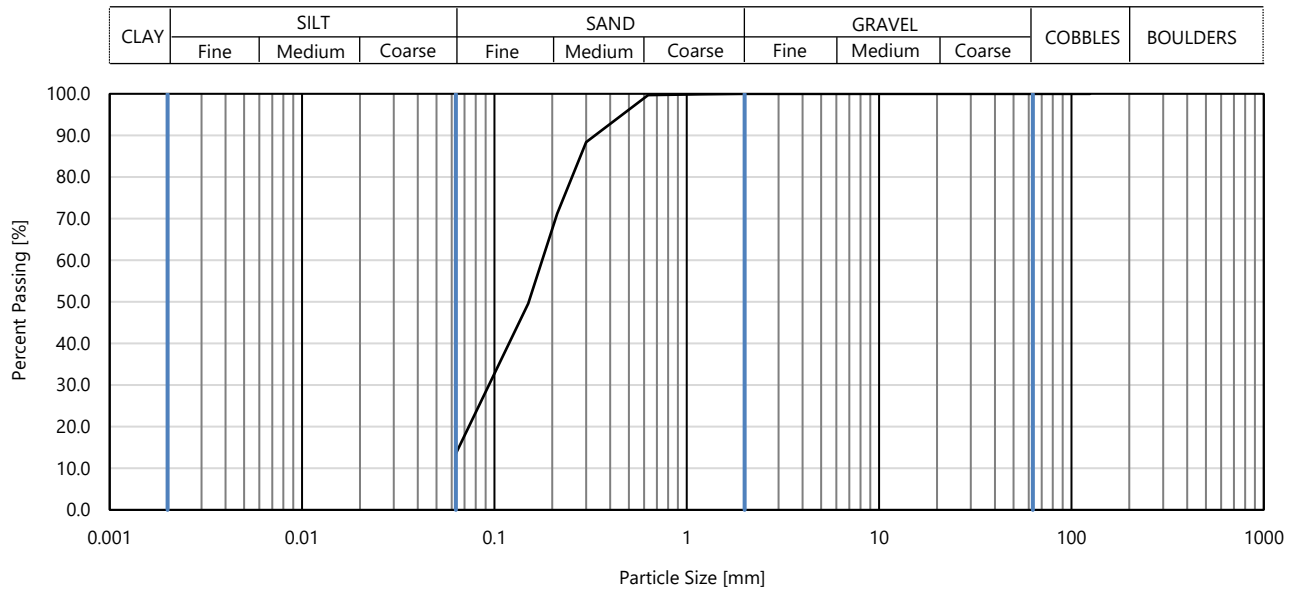
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	88		
0.212	71		
0.150	50		
0.0630	14		

Dry Mass of Sample [g]	919
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	86.4
Fines <0.063mm	13.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.177
D30 [mm]	0.0936
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

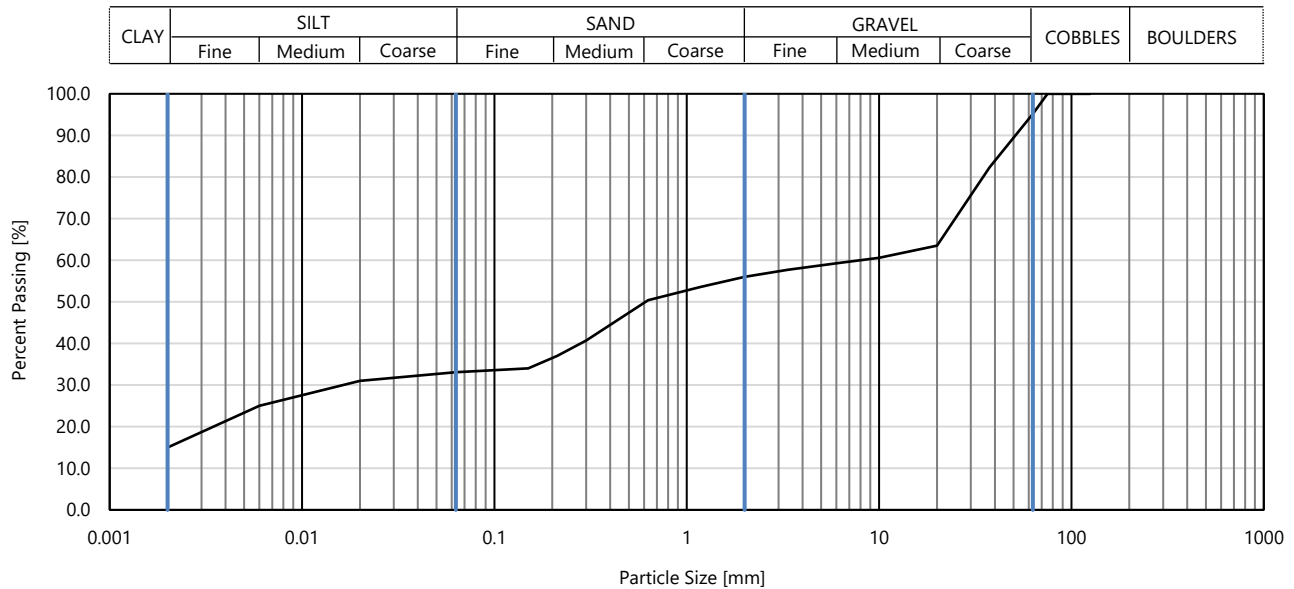
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
Specimen Description	Brown very sandy very clayey GRAVEL with low cobble content	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	44



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	31
90.0	100	0.00600	25
75.0	100	0.00200	15
63.0	95		
37.5	82		
20.0	64		
10.0	61		
6.30	59		
3.35	58		
2.00	56		
1.18	54		
0.630	50		
0.300	41		
0.212	37		
0.150	34		
0.0630	33		

Dry Mass of Sample [g]	5725
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	4.8
Gravel	39.3
Sand	22.9
Silt	17.8
Clay	15.2

Grading Analysis	
D100 [mm]	75
D60 [mm]	7.9
D30 [mm]	0.0179
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

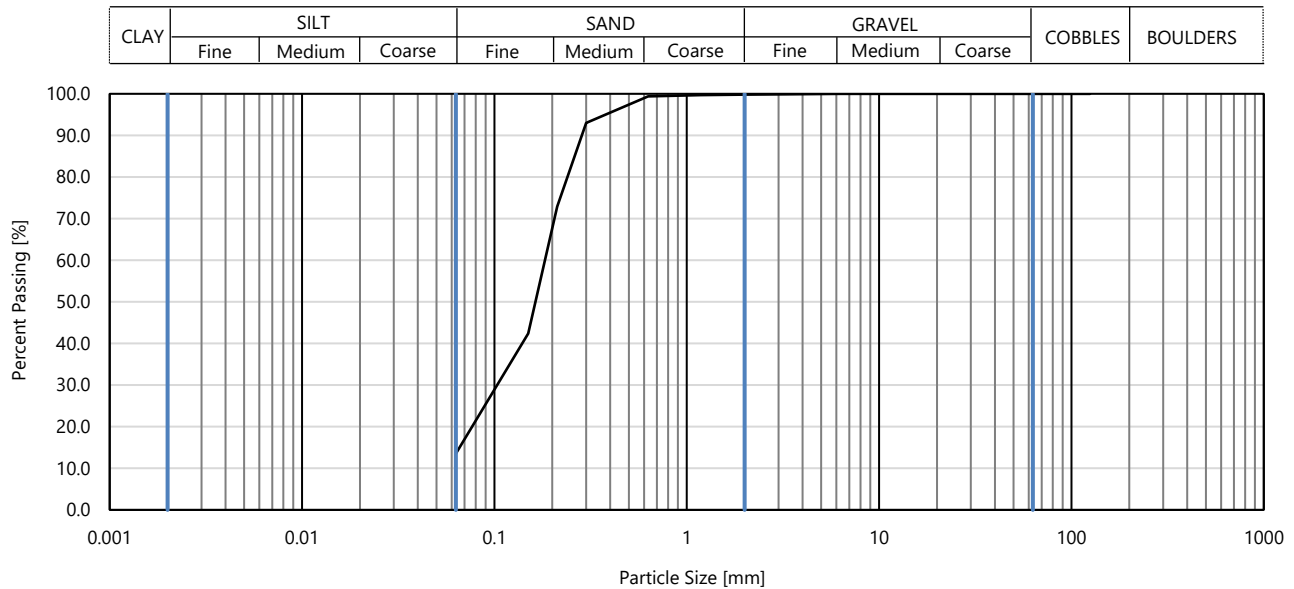
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	93		
0.212	73		
0.150	42		
0.0630	14		

Dry Mass of Sample [g]	1072
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	86.3
Fines <0.063mm	13.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.183
D30 [mm]	0.103
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

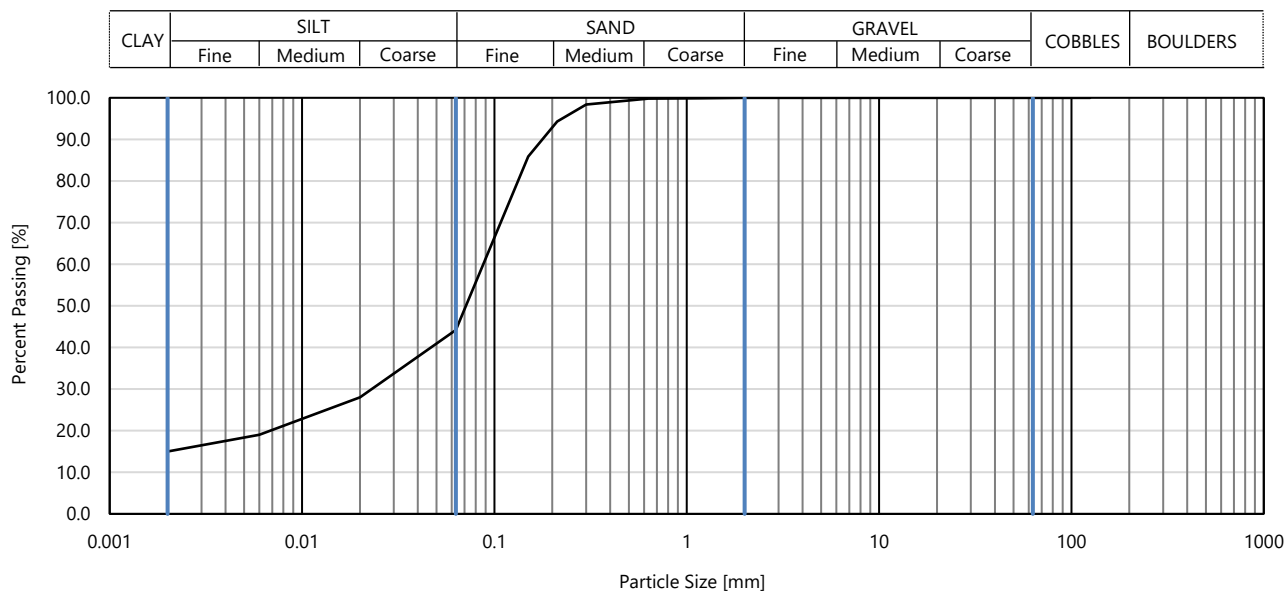
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	28
90.0	100	0.00600	19
75.0	100	0.00200	15
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	94		
0.150	86		
0.0630	44		

Dry Mass of Sample [g]	1082
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	55.8
Silt	29.3
Clay	14.9

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0876
D30 [mm]	0.0228
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

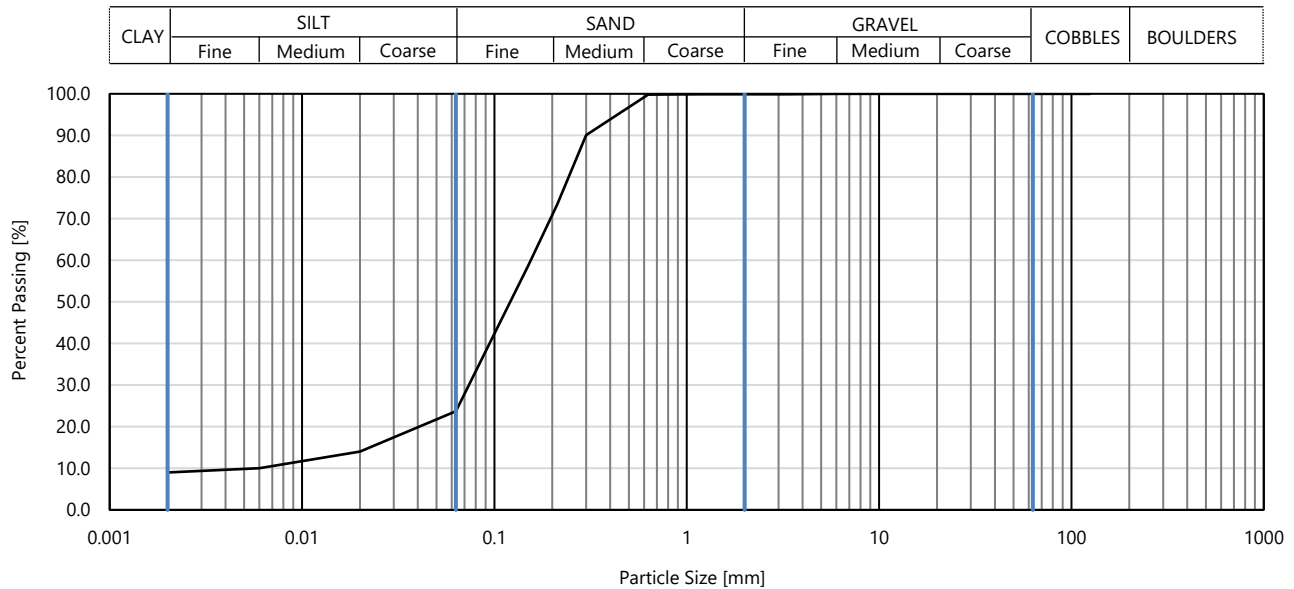
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	10
75.0	100	0.00200	9
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	90		
0.212	73		
0.150	59		
0.0630	24		

Dry Mass of Sample [g]	828
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	76.2
Silt	15.1
Clay	8.6

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.155
D30 [mm]	0.0736
D10 [mm]	0.00618
Coefficient of Uniformity	25
Coefficient of Curvature	5.7

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

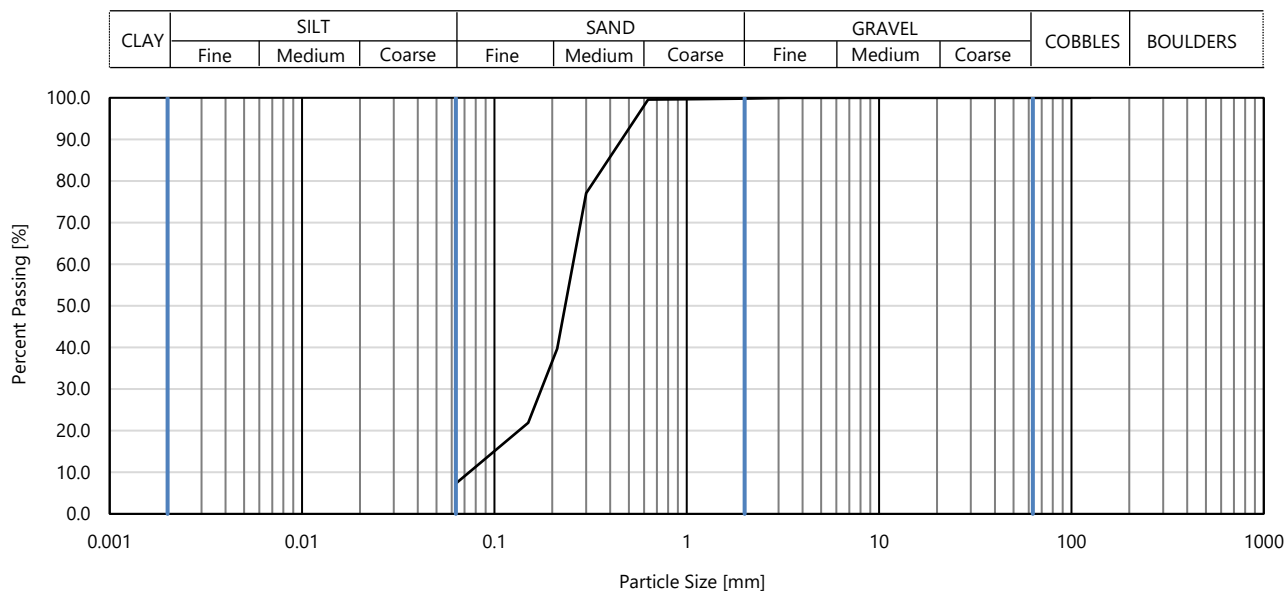
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.50
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	77		
0.212	40		
0.150	22		
0.0630	7		

Dry Mass of Sample [g]	752
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	92.5
Fines <0.063mm	7.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.256
D30 [mm]	0.175
D10 [mm]	0.0738
Coefficient of Uniformity	3.5
Coefficient of Curvature	1.6

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

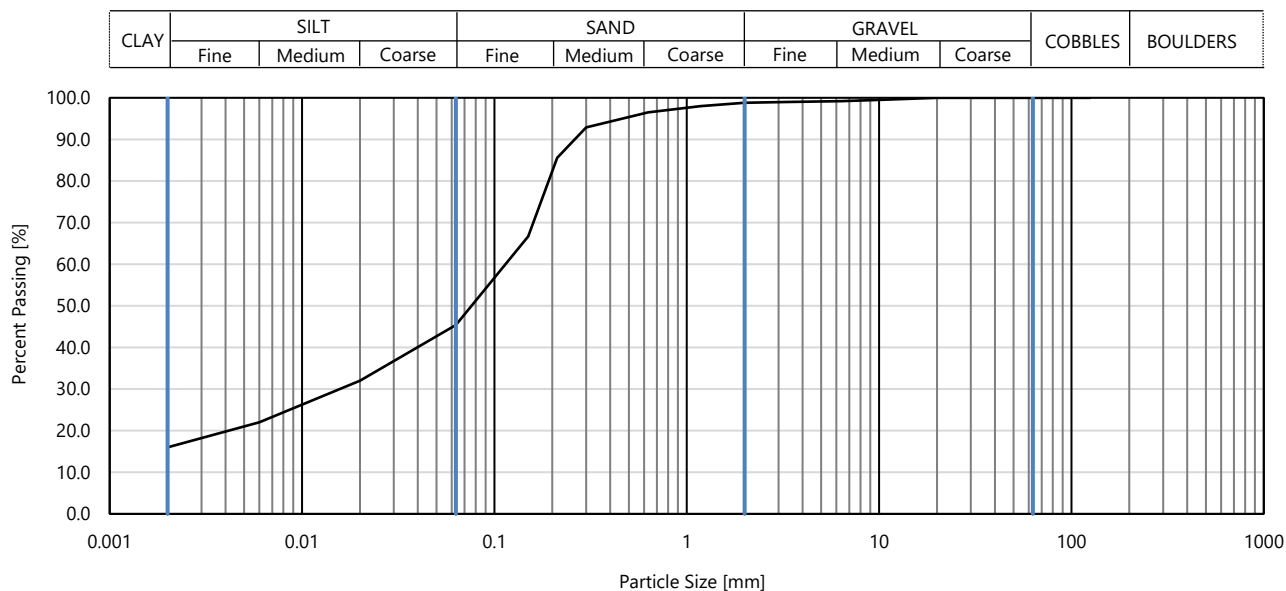
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.10
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	32
90.0	100	0.00600	22
75.0	100	0.00200	16
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	99		
3.35	99		
2.00	99		
1.18	98		
0.630	97		
0.300	93		
0.212	86		
0.150	67		
0.0630	45		

Dry Mass of Sample [g]	564
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.2
Sand	53.4
Silt	29.4
Clay	16.0

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.114
D30 [mm]	0.016
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

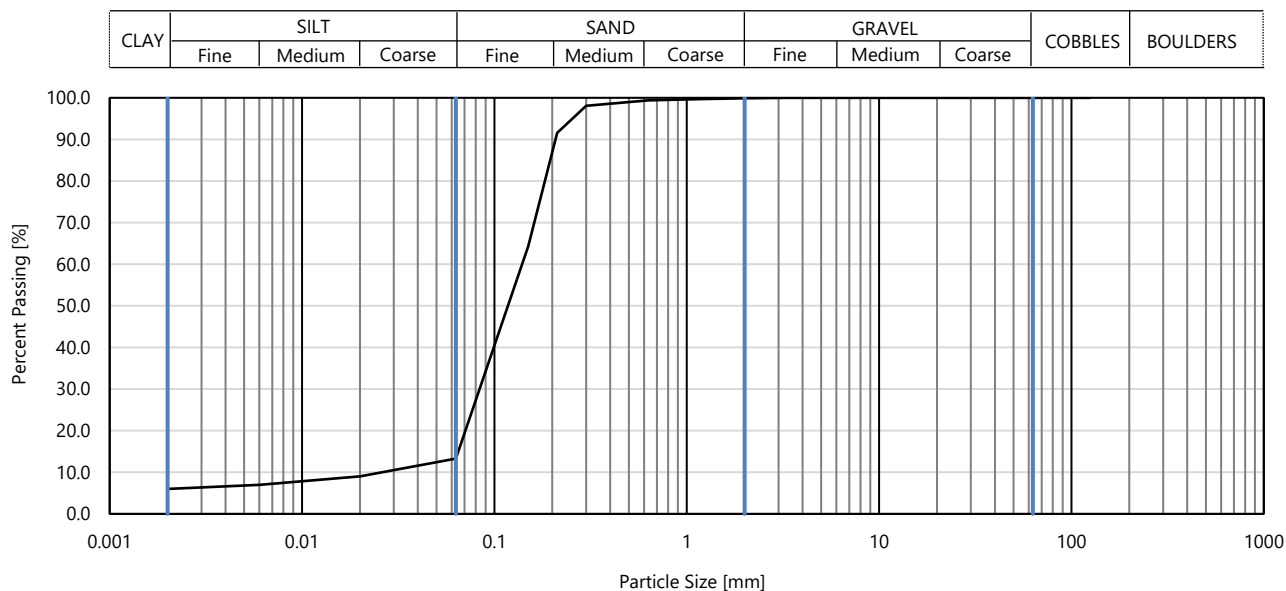
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.50
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	9
90.0	100	0.00600	7
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	98		
0.212	92		
0.150	64		
0.0630	13		

Dry Mass of Sample [g]	932
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	86.6
Silt	7.4
Clay	5.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.139
D30 [mm]	0.0837
D10 [mm]	0.0266
Coefficient of Uniformity	5.2
Coefficient of Curvature	1.9

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

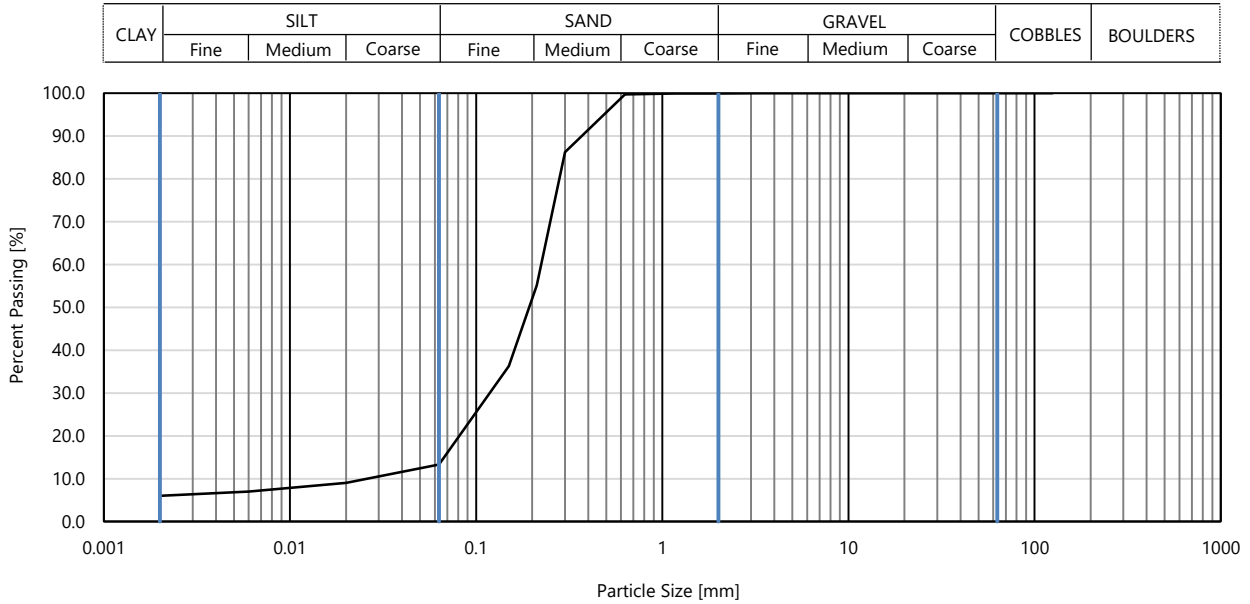
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	9
90.0	100	0.00600	7
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	86		
0.212	55		
0.150	36		
0.0630	13		

Dry Mass of Sample [g]	944
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	86.6
Silt	7.3
Clay	6.0

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.224
D30 [mm]	0.118
D10 [mm]	0.0271
Coefficient of Uniformity	8.3
Coefficient of Curvature	2.3

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

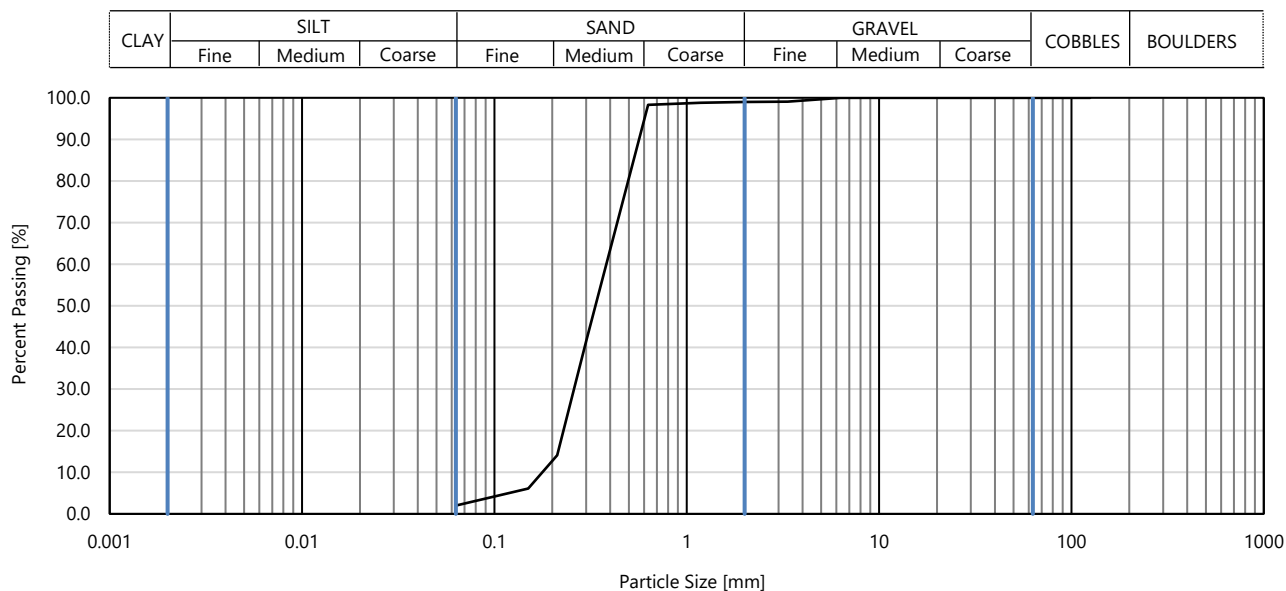
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	32



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	99		
0.630	98		
0.300	42		
0.212	14		
0.150	6		
0.0630	2		

Dry Mass of Sample [g]	1345
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.0
Sand	97.0
Fines <0.063mm	2.0

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.382
D30 [mm]	0.259
D10 [mm]	0.178
Coefficient of Uniformity	2.2
Coefficient of Curvature	0.99

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

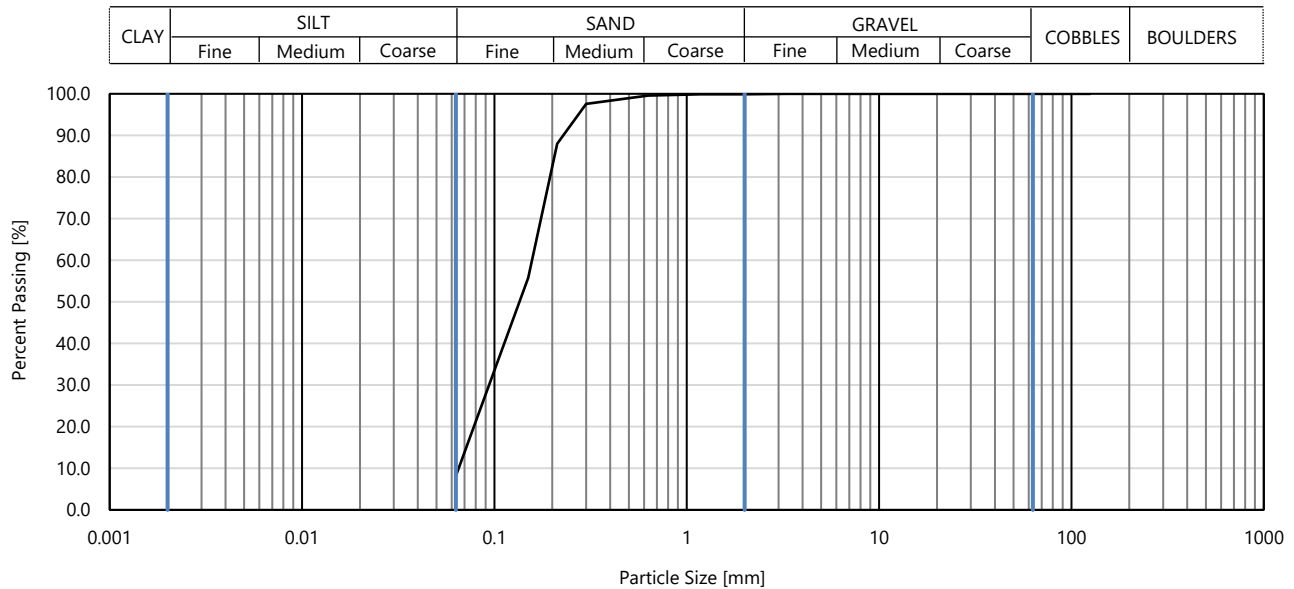
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.90
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	88		
0.150	56		
0.0630	8		

Dry Mass of Sample [g]	1204
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	91.8
Fines <0.063mm	8.1

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.157
D30 [mm]	0.0938
D10 [mm]	0.0652
Coefficient of Uniformity	2.4
Coefficient of Curvature	0.86

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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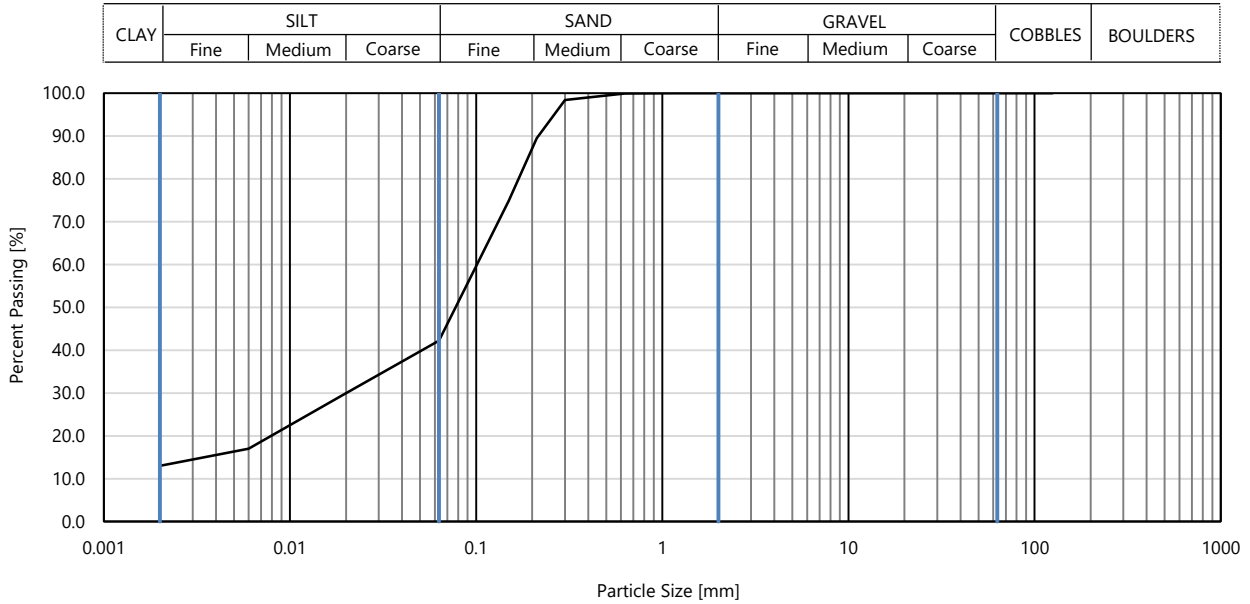
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.50
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	30
90.0	100	0.00600	17
75.0	100	0.00200	13
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	90		
0.150	75		
0.0630	42		

Dry Mass of Sample [g]	847
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	57.8
Silt	29.2
Clay	13.0

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.101
D30 [mm]	0.0202
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	30/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	30/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

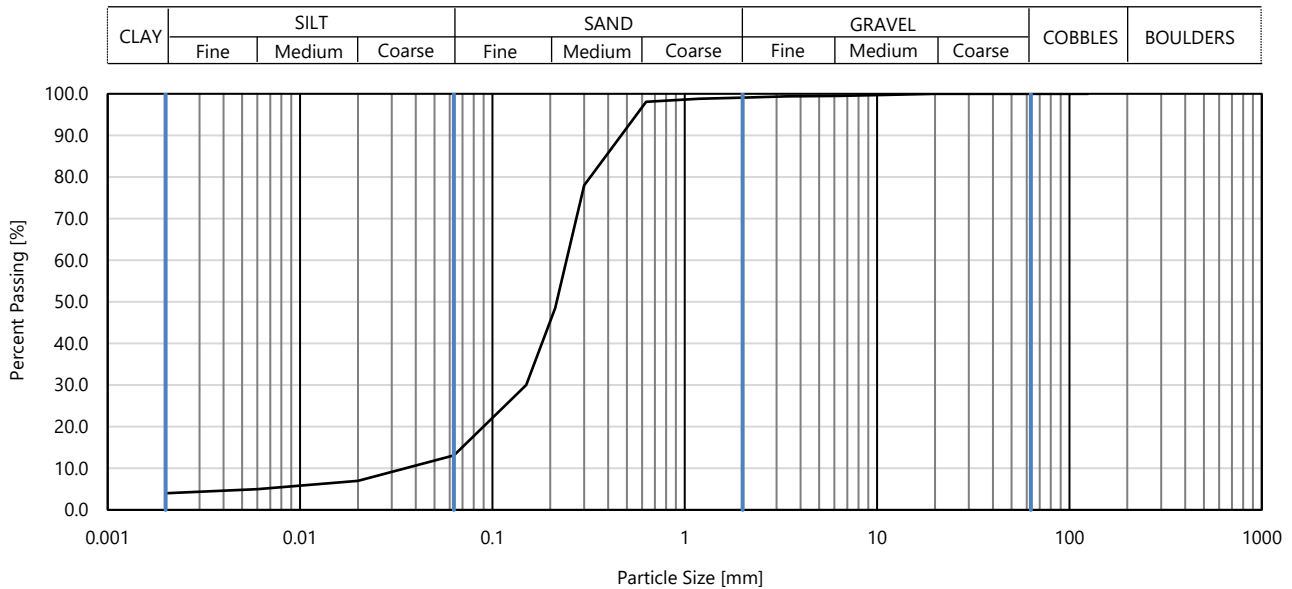
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.20
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	25



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	7
90.0	100	0.00600	5
75.0	100	0.00200	4
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	99		
0.630	98		
0.300	78		
0.212	49		
0.150	30		
0.0630	13		

Dry Mass of Sample [g]	2357
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.9
Sand	86.0
Silt	9.4
Clay	3.7

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.243
D30 [mm]	0.15
D10 [mm]	0.0333
Coefficient of Uniformity	7.3
Coefficient of Curvature	2.8

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:	Combined with D26, D27, D28 and D29				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

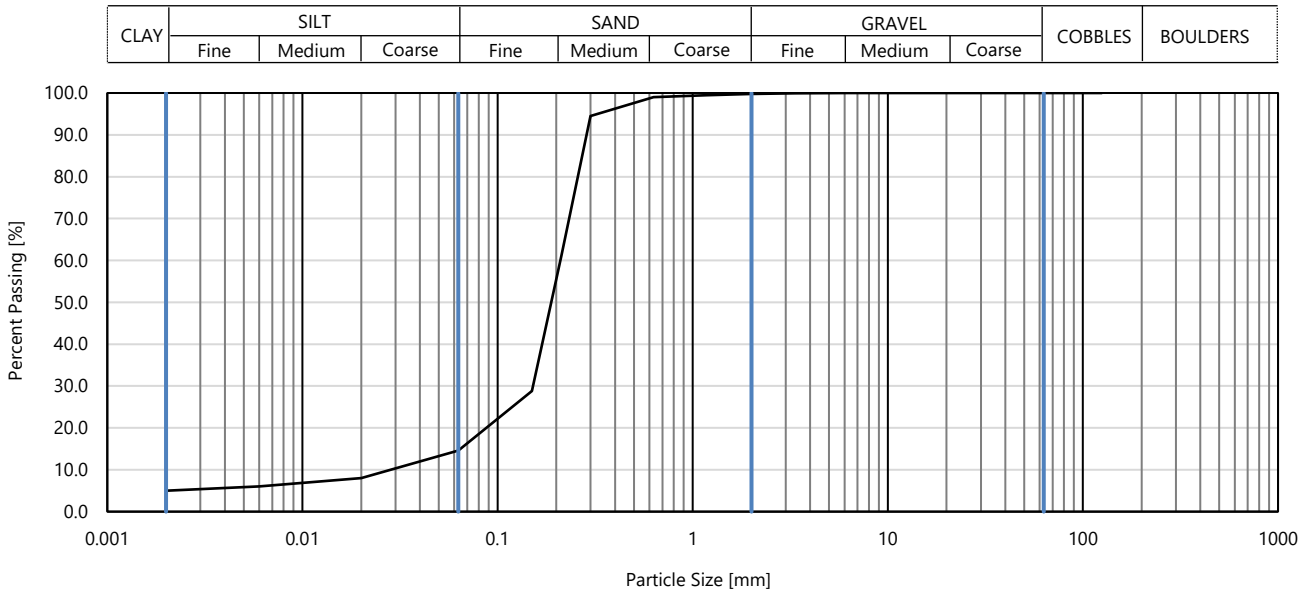
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.90
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	8
90.0	100	0.00600	6
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	95		
0.212	61		
0.150	29		
0.0630	15		

Dry Mass of Sample [g]	1004
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	85.2
Silt	9.9
Clay	4.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.21
D30 [mm]	0.152
D10 [mm]	0.0286
Coefficient of Uniformity	7.3
Coefficient of Curvature	3.9

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

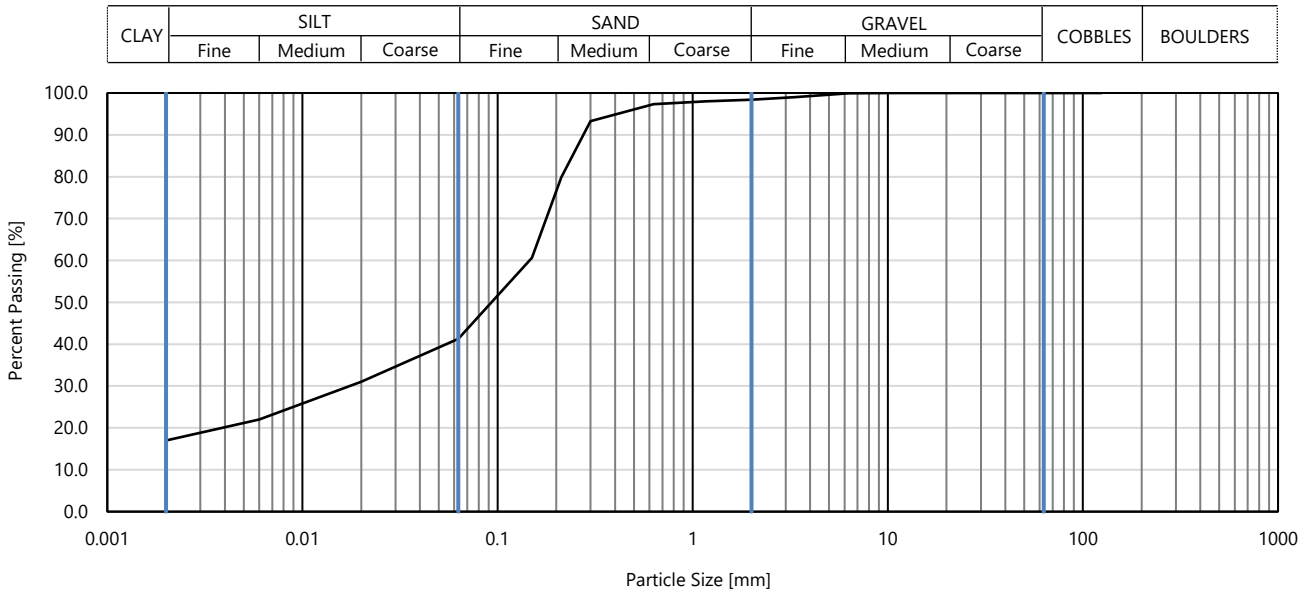
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.10
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	31
90.0	100	0.00600	22
75.0	100	0.00200	17
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	98		
1.18	98		
0.630	97		
0.300	93		
0.212	80		
0.150	61		
0.0630	41		

Dry Mass of Sample [g]	786
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.6
Sand	57.1
Silt	24.7
Clay	16.6

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.146
D30 [mm]	0.0178
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	23/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	19/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

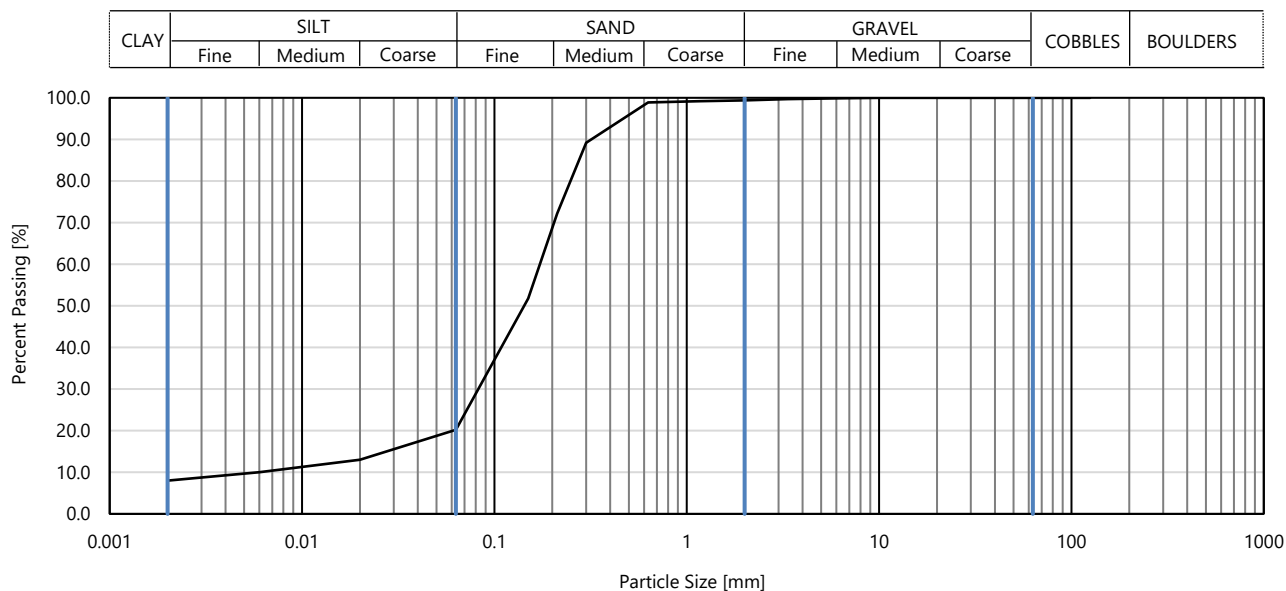
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.50
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	23



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	13
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	99		
0.300	89		
0.212	72		
0.150	52		
0.0630	20		

Dry Mass of Sample [g]	1529
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.6
Sand	79.2
Silt	12.0
Clay	8.2

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.172
D30 [mm]	0.0824
D10 [mm]	0.00642
Coefficient of Uniformity	27
Coefficient of Curvature	6.1

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:	Combined D22, D26 and D27				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

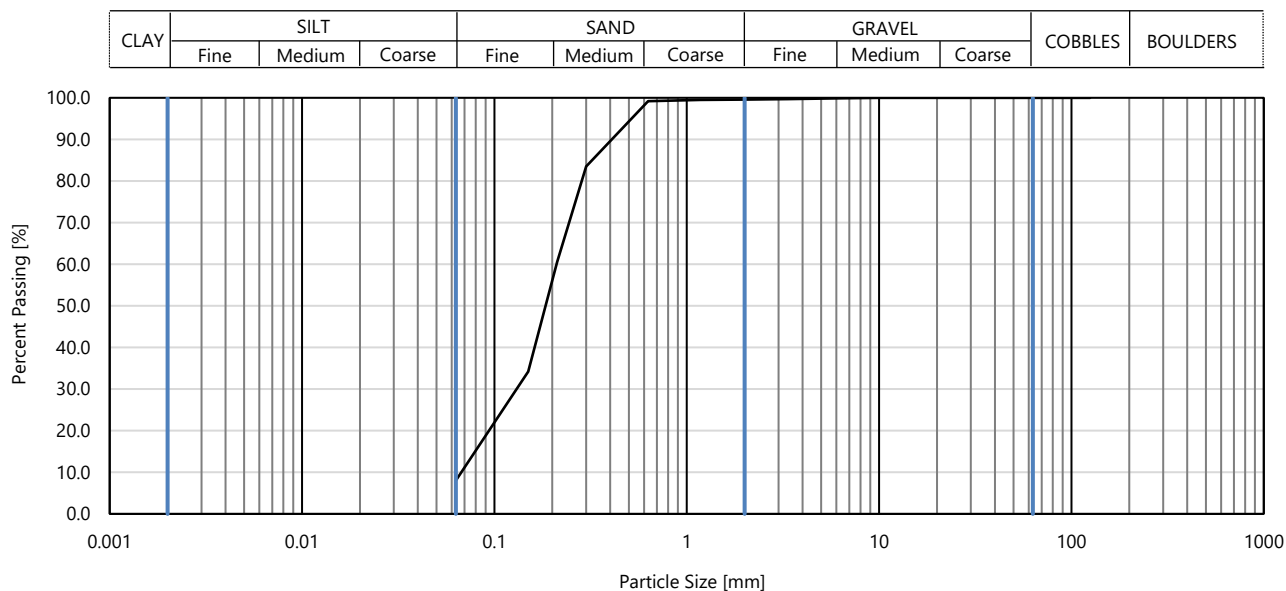
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	35



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	84		
0.212	61		
0.150	34		
0.0630	8		

Dry Mass of Sample [g]	1145
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.4
Sand	91.6
Fines <0.063mm	8.0

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.21
D30 [mm]	0.13
D10 [mm]	0.0674
Coefficient of Uniformity	3.1
Coefficient of Curvature	1.2

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Combined with D36 12.70m				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

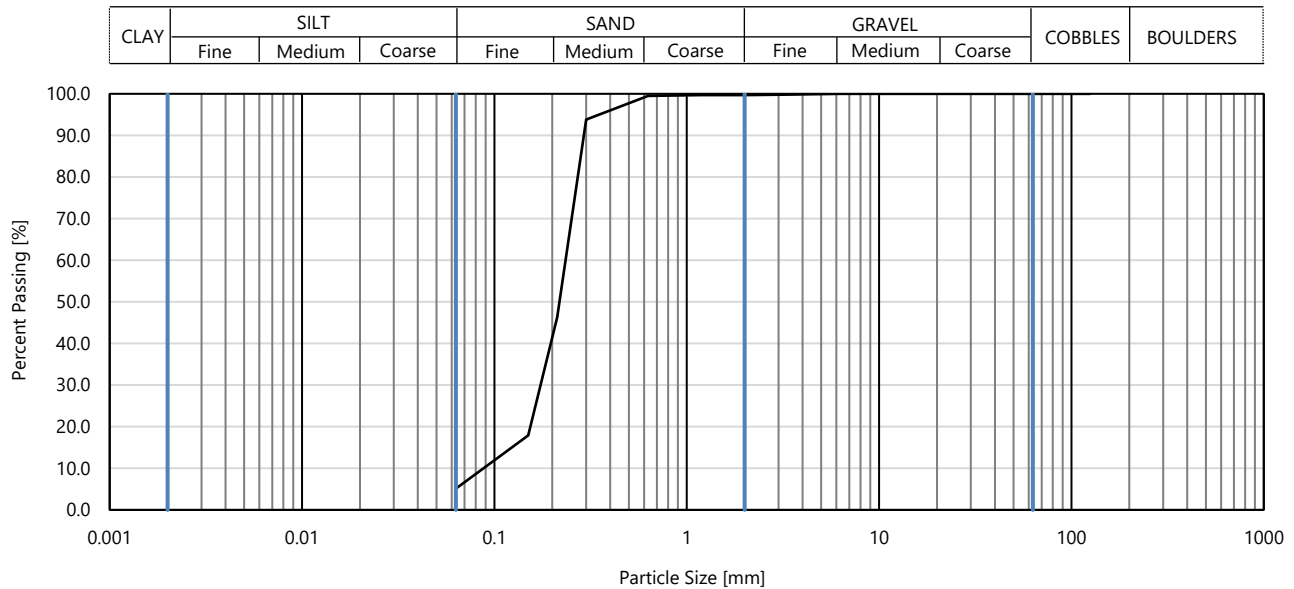
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	94		
0.212	46		
0.150	18		
0.0630	5		

Dry Mass of Sample [g]	1256
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	94.6
Fines <0.063mm	5.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.234
D30 [mm]	0.174
D10 [mm]	0.0878
Coefficient of Uniformity	2.7
Coefficient of Curvature	1.5

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

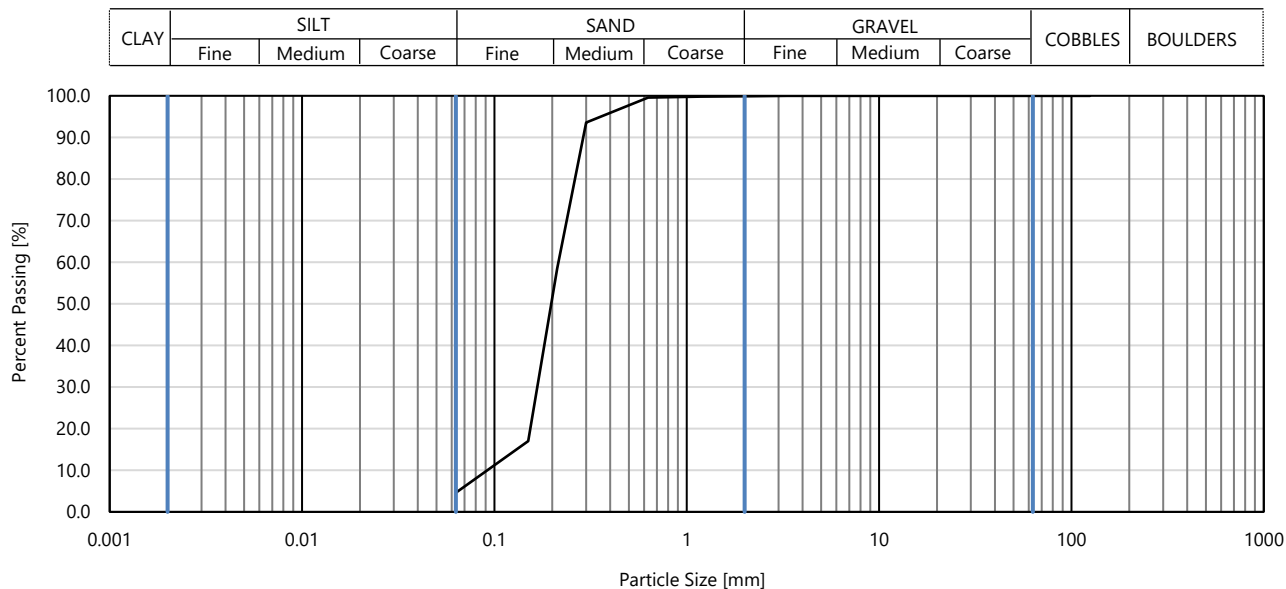
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.30
Specimen Description	Brown slightly gravelly slightly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	8



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	94		
0.212	59		
0.150	17		
0.0630	5		

Dry Mass of Sample [g]	813
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	95.4
Fines <0.063mm	4.6

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.215
D30 [mm]	0.167
D10 [mm]	0.0921
Coefficient of Uniformity	2.3
Coefficient of Curvature	1.4

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

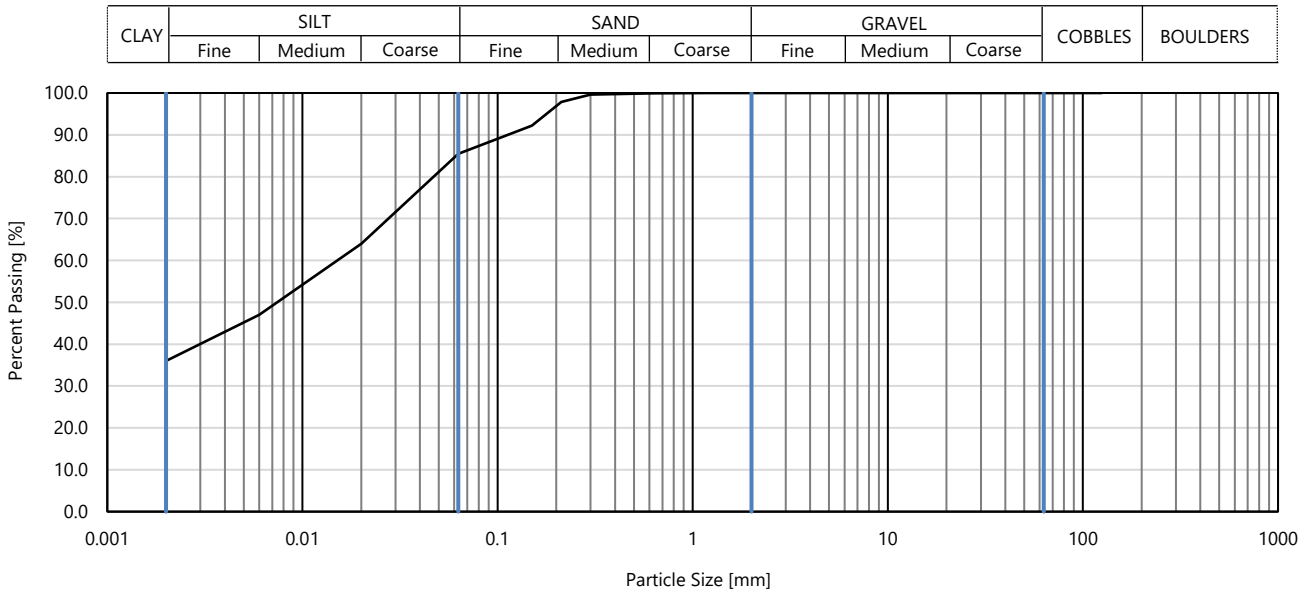
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	11



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	64
90.0	100	0.00600	47
75.0	100	0.00200	36
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	98		
0.150	92		
0.0630	86		

Dry Mass of Sample [g]	761
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	14.5
Silt	49.7
Clay	35.8

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.0149
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

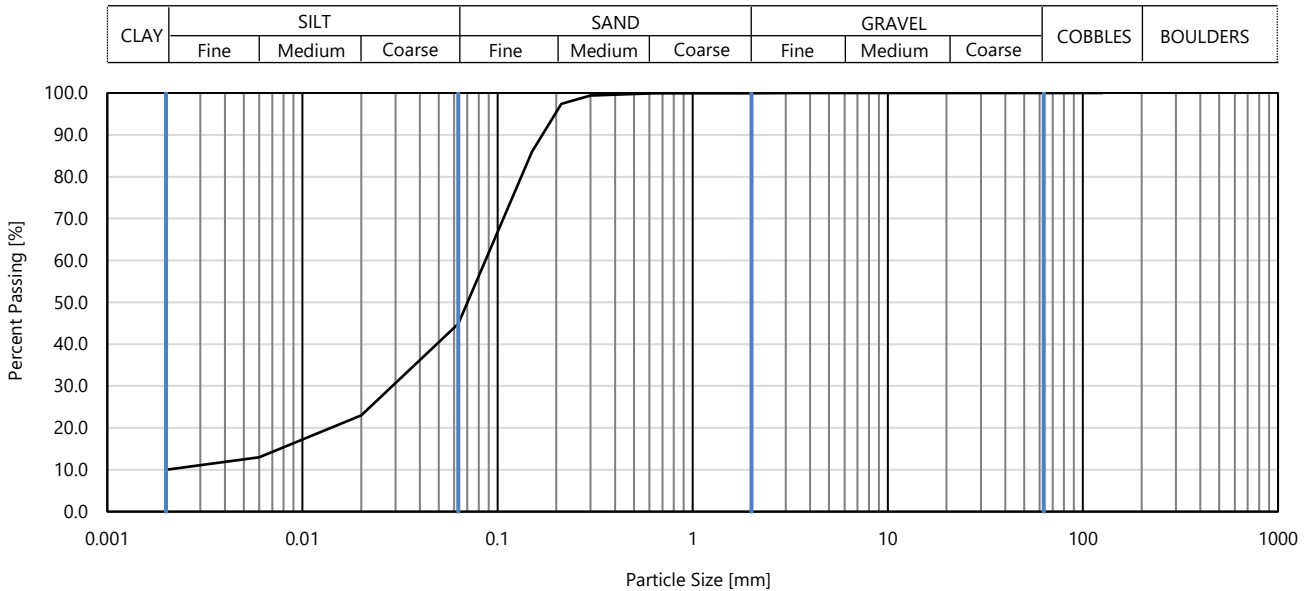
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.00
Specimen Description	Brown slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	23
90.0	100	0.00600	13
75.0	100	0.00200	10
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	97		
0.150	86		
0.0630	45		

Dry Mass of Sample [g]	930
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	55.0
Silt	35.2
Clay	9.7

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0867
D30 [mm]	0.0288
D10 [mm]	0.00223
Coefficient of Uniformity	39
Coefficient of Curvature	4.3

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

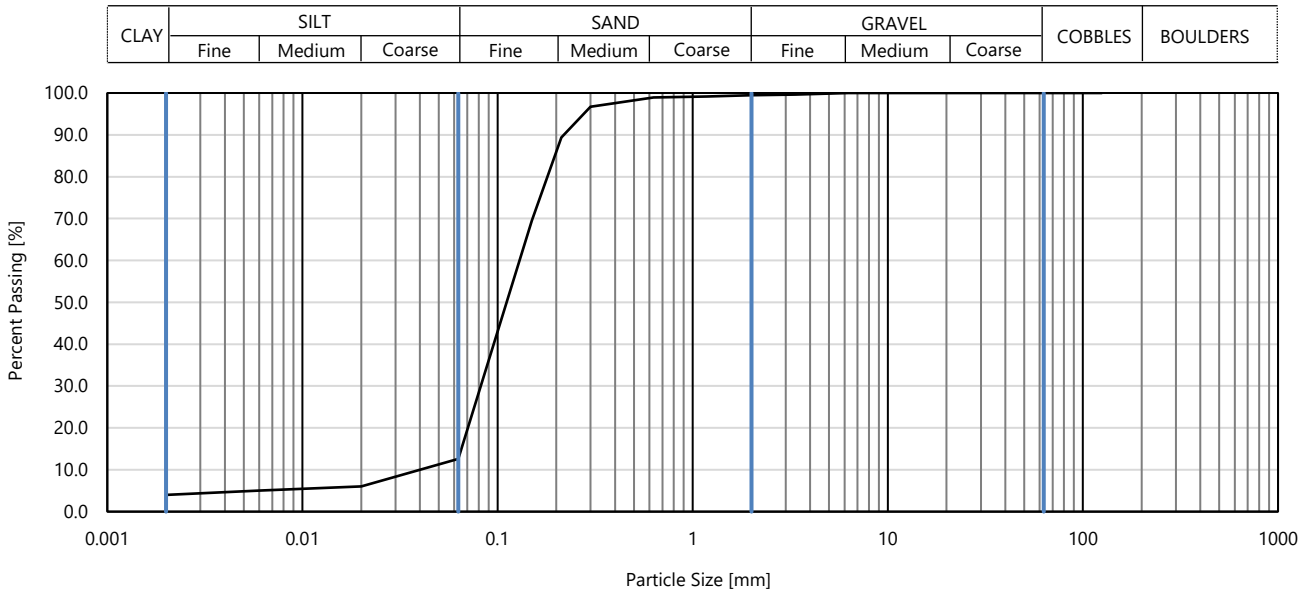
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	6
90.0	100	0.00600	5
75.0	100	0.00200	4
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	97		
0.212	89		
0.150	70		
0.0630	13		

Dry Mass of Sample [g]	882
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.5
Sand	86.9
Silt	8.5
Clay	4.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.13
D30 [mm]	0.0821
D10 [mm]	0.0394
Coefficient of Uniformity	3.3
Coefficient of Curvature	1.3

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

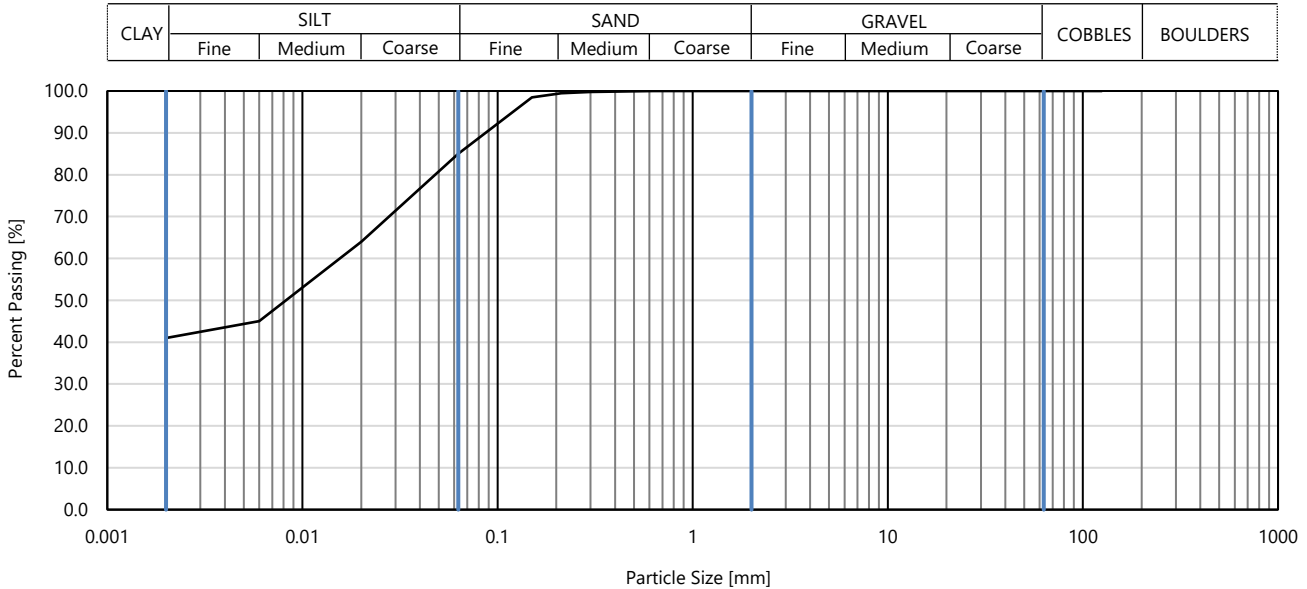
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	UT#B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	64
90.0	100	0.00600	45
75.0	100	0.00200	41
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	100		
0.150	99		
0.0630	85		

Dry Mass of Sample [g]	946
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	15.0
Silt	43.6
Clay	41.4

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.0152
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	23/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	19/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

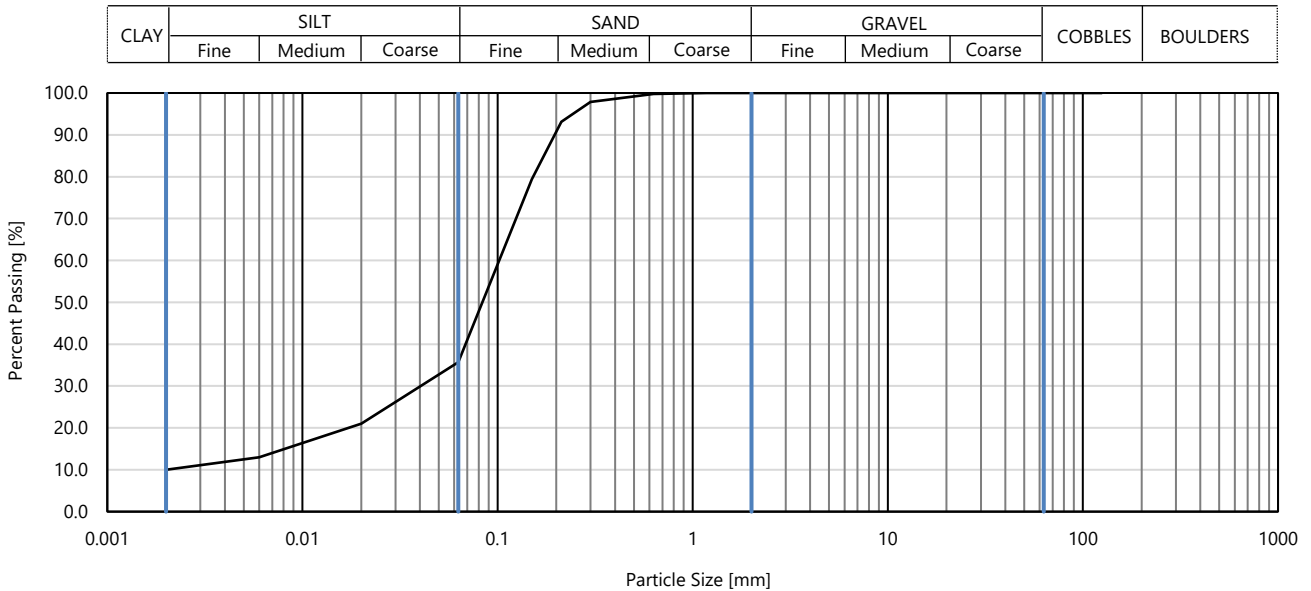
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	MS-BH27
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.50
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	21
90.0	100	0.00600	13
75.0	100	0.00200	10
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	93		
0.150	79		
0.0630	36		

Dry Mass of Sample [g]	854
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	64.3
Silt	25.7
Clay	10.0

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.102
D30 [mm]	0.0399
D10 [mm]	0.00201
Coefficient of Uniformity	51
Coefficient of Curvature	7.8

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

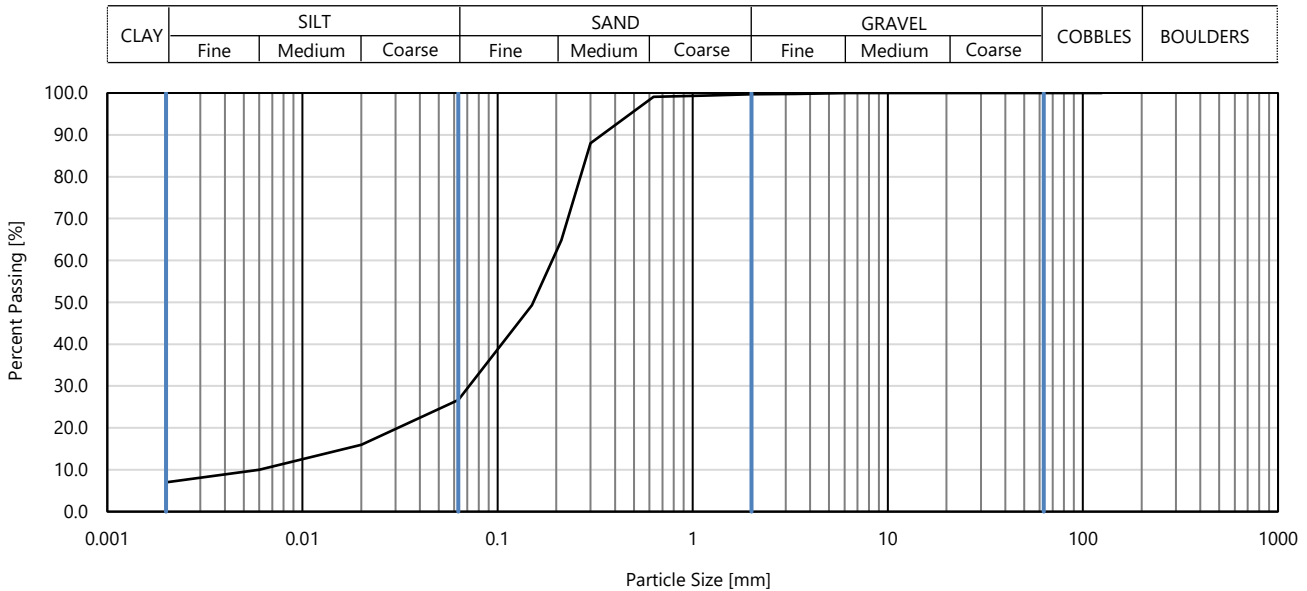
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH101
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.50
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	53



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	16
90.0	100	0.00600	10
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	99		
0.300	88		
0.212	65		
0.150	49		
0.0630	27		

Dry Mass of Sample [g]	1006
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	73.0
Silt	19.4
Clay	7.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.19
D30 [mm]	0.0715
D10 [mm]	0.00614
Coefficient of Uniformity	31
Coefficient of Curvature	4.4

Issue Date	23/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	19/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

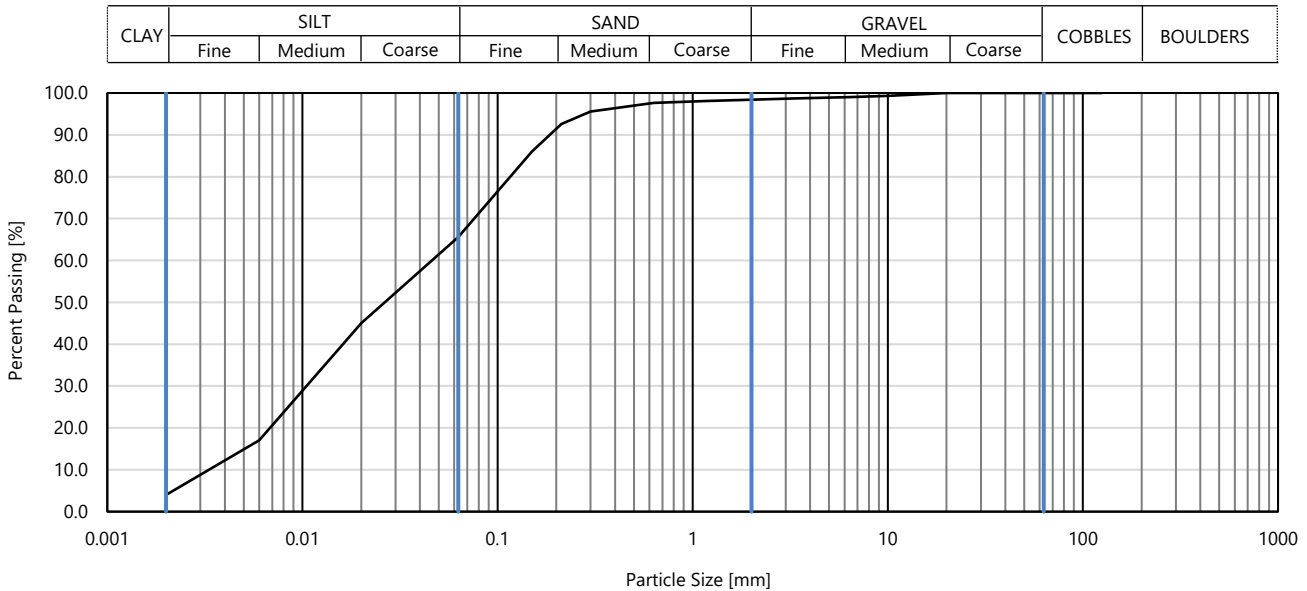
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH102
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.50
Specimen Description	Black slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	5



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	45
90.0	100	0.00600	17
75.0	100	0.00200	4
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	99		
3.35	99		
2.00	98		
1.18	98		
0.630	98		
0.300	96		
0.212	93		
0.150	86		
0.0630	66		

Dry Mass of Sample [g]	965
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	1.6
Sand	32.8
Silt	61.2
Clay	4.4

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.0459
D30 [mm]	0.0103
D10 [mm]	0.00322
Coefficient of Uniformity	14
Coefficient of Curvature	0.72

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

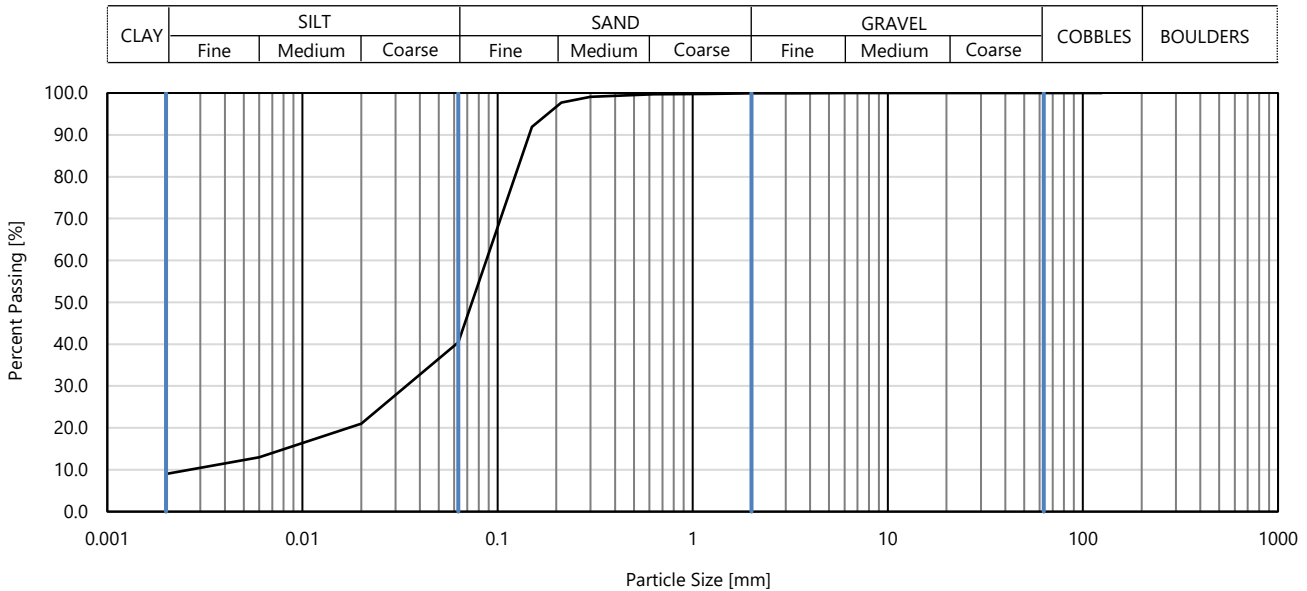
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH102
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.50
Specimen Description	Brown slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	46



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	21
90.0	100	0.00600	13
75.0	100	0.00200	9
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	98		
0.150	92		
0.0630	40		

Dry Mass of Sample [g]	947
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	59.5
Silt	31.3
Clay	9.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.0876
D30 [mm]	0.0344
D10 [mm]	0.00257
Coefficient of Uniformity	34
Coefficient of Curvature	5.2

Issue Date	23/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	19/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

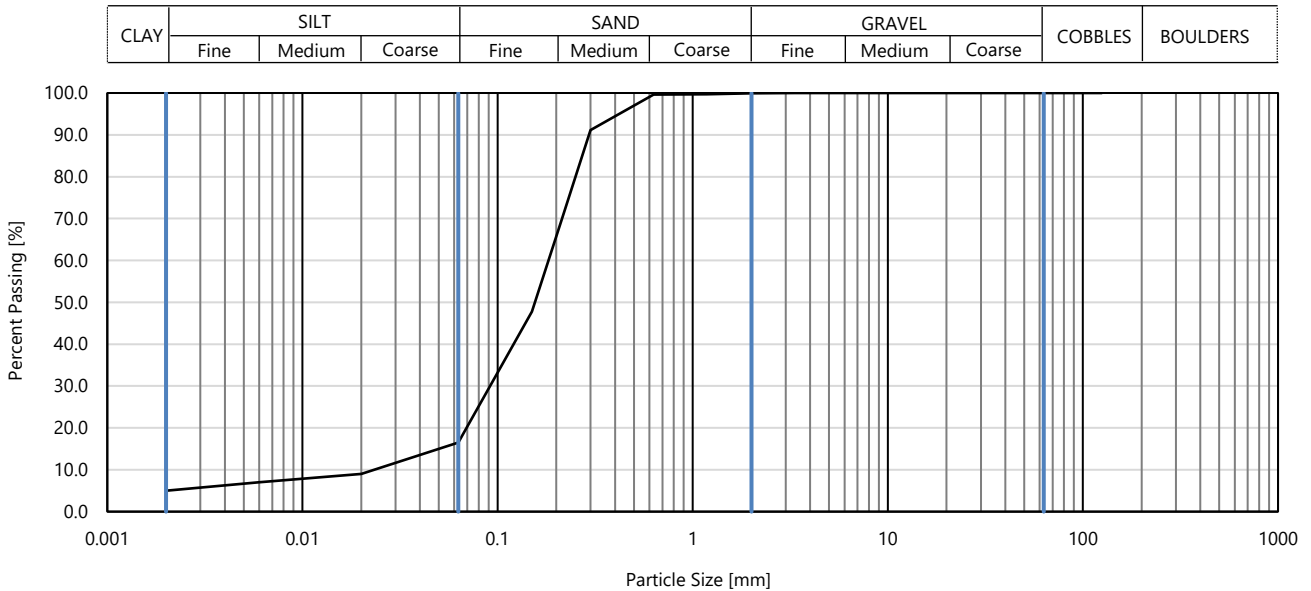
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH102
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	55



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	9
90.0	100	0.00600	7
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	91		
0.212	70		
0.150	48		
0.0630	17		

Dry Mass of Sample [g]	1645
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	83.4
Silt	11.5
Clay	5.0

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.182
D30 [mm]	0.0916
D10 [mm]	0.0224
Coefficient of Uniformity	8.1
Coefficient of Curvature	2.1

Issue Date	23/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	19/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

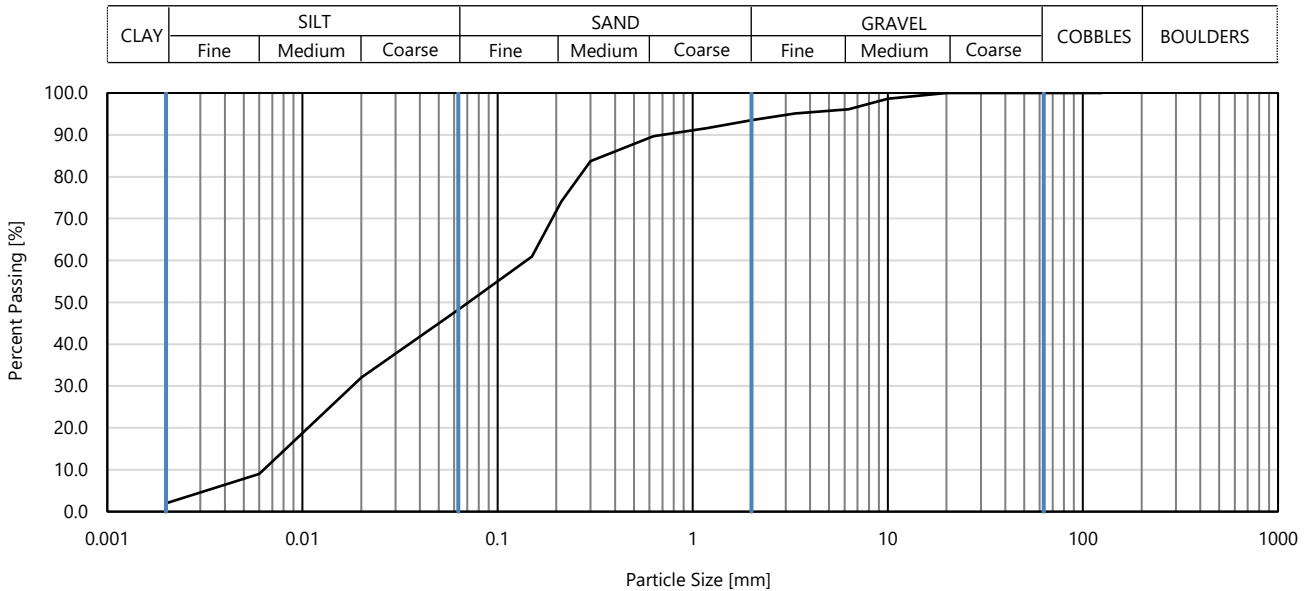
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
Specimen Description	Black slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	42



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	32
90.0	100	0.00600	9
75.0	100	0.00200	2
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	96		
3.35	95		
2.00	94		
1.18	92		
0.630	90		
0.300	84		
0.212	74		
0.150	61		
0.0630	48		

Dry Mass of Sample [g]	753
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	6.5
Sand	45.3
Silt	45.7
Clay	2.5

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.141
D30 [mm]	0.0178
D10 [mm]	0.00624
Coefficient of Uniformity	23
Coefficient of Curvature	0.36

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

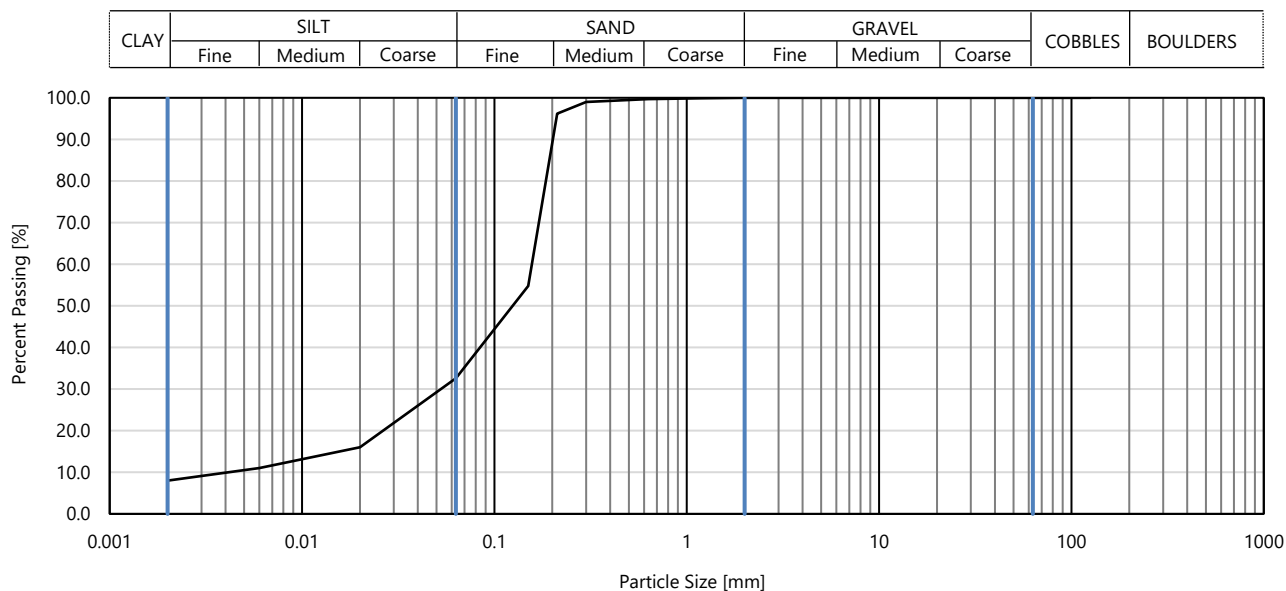
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.50
Specimen Description	Brown very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	50



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	16
90.0	100	0.00600	11
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	96		
0.150	55		
0.0630	33		

Dry Mass of Sample [g]	1071
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	67.4
Silt	24.3
Clay	8.3

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.157
D30 [mm]	0.0526
D10 [mm]	0.00424
Coefficient of Uniformity	37
Coefficient of Curvature	4.2

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

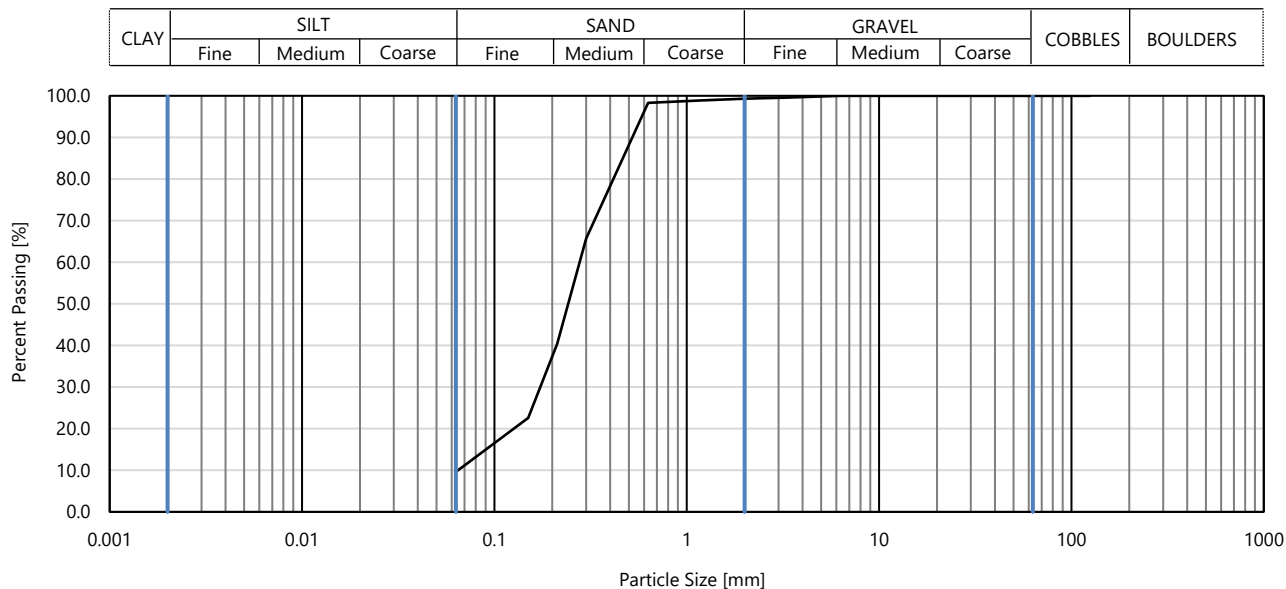
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	29.00
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	62



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	98		
0.300	66		
0.212	40		
0.150	23		
0.0630	10		

Dry Mass of Sample [g]	1136
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.7
Sand	89.6
Fines <0.063mm	9.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.277
D30 [mm]	0.173
D10 [mm]	0.0646
Coefficient of Uniformity	4.3
Coefficient of Curvature	1.7

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

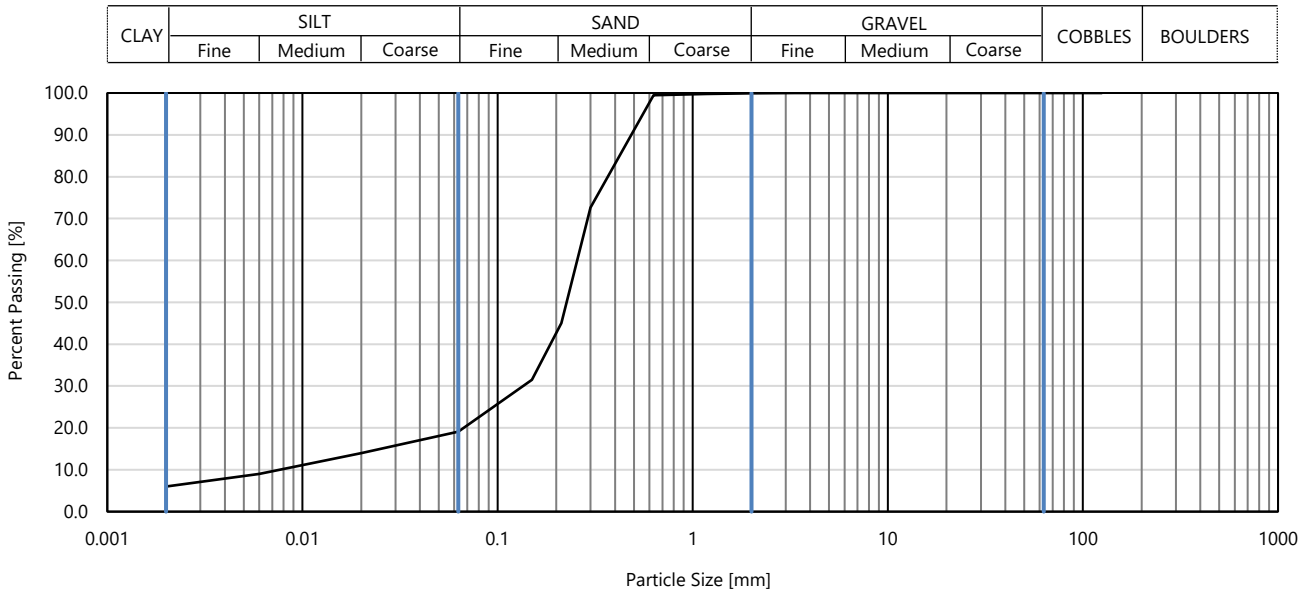
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH104
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	31



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	9
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	73		
0.212	45		
0.150	32		
0.0630	19		

Dry Mass of Sample [g]	914
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	80.8
Silt	13.0
Clay	6.1

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.256
D30 [mm]	0.135
D10 [mm]	0.00817
Coefficient of Uniformity	31
Coefficient of Curvature	8.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

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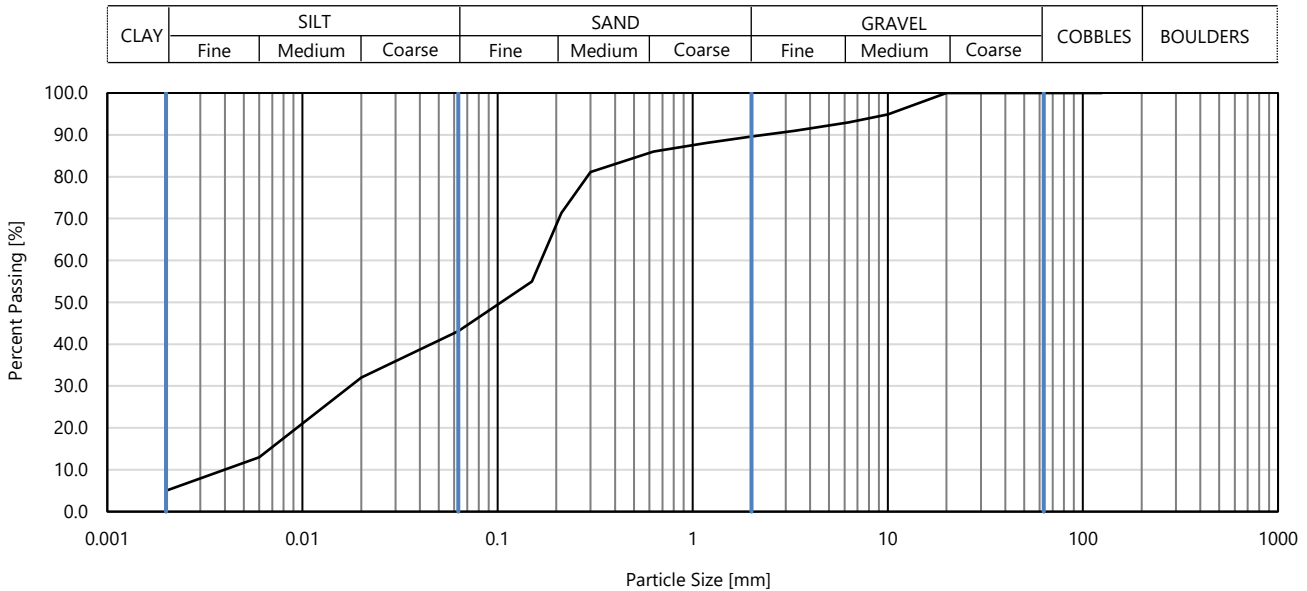
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH105
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Grey slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	10



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	32
90.0	100	0.00600	13
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	95		
6.30	93		
3.35	91		
2.00	90		
1.18	88		
0.630	86		
0.300	81		
0.212	71		
0.150	55		
0.0630	43		

Dry Mass of Sample [g]	714
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	10.4
Sand	46.6
Silt	38.3
Clay	4.7

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.167
D30 [mm]	0.0177
D10 [mm]	0.00406
Coefficient of Uniformity	41
Coefficient of Curvature	0.46

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

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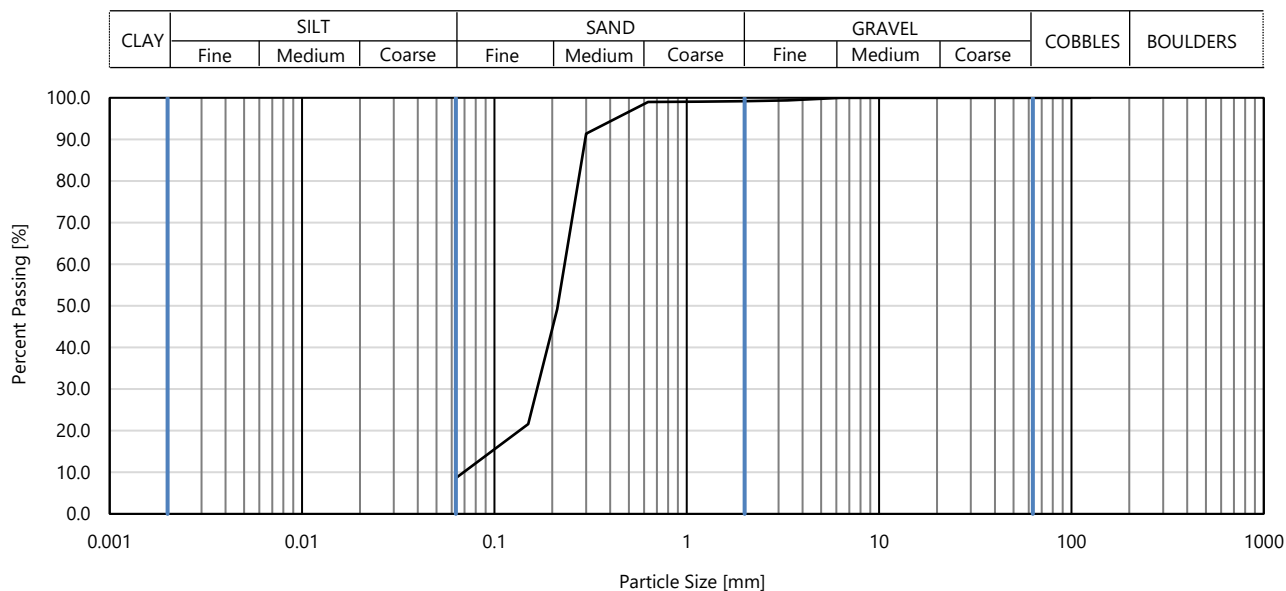
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	5.30
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	24



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	99		
2.00	99		
1.18	99		
0.630	99		
0.300	91		
0.212	49		
0.150	22		
0.0630	9		

Dry Mass of Sample [g]	1318
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.8
Sand	90.7
Fines <0.063mm	8.6

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.232
D30 [mm]	0.167
D10 [mm]	0.0694
Coefficient of Uniformity	3.3
Coefficient of Curvature	1.7

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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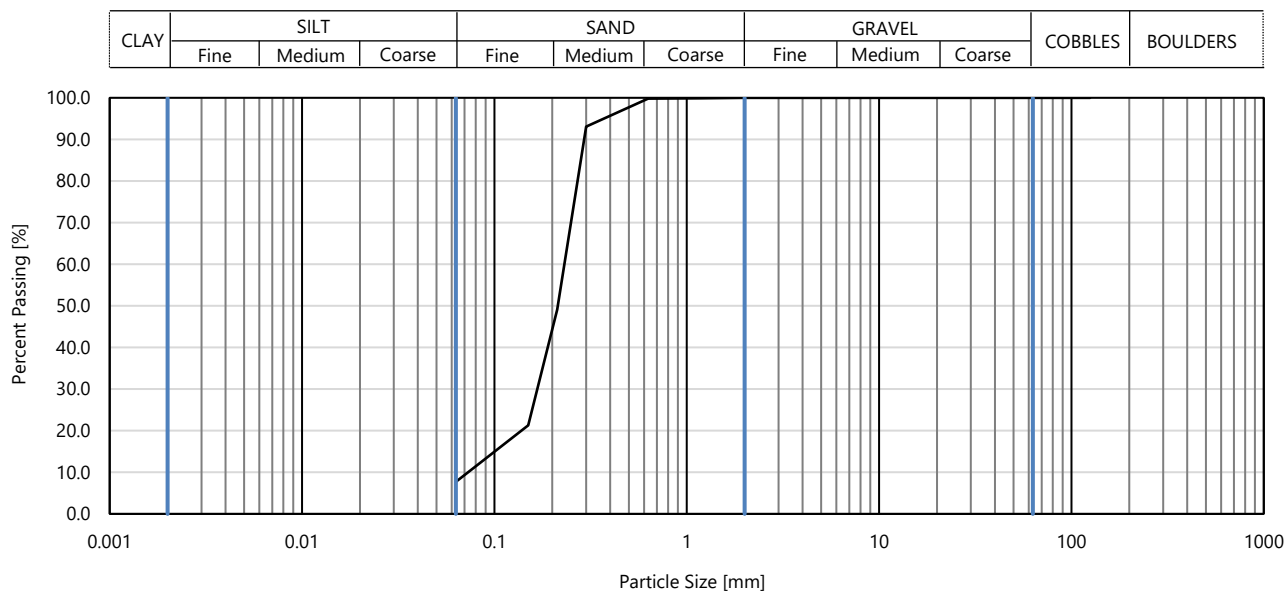
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.30
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	93		
0.212	49		
0.150	21		
0.0630	8		

Dry Mass of Sample [g]	692
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	92.3
Fines <0.063mm	7.7

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.231
D30 [mm]	0.167
D10 [mm]	0.0729
Coefficient of Uniformity	3.2
Coefficient of Curvature	1.7

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

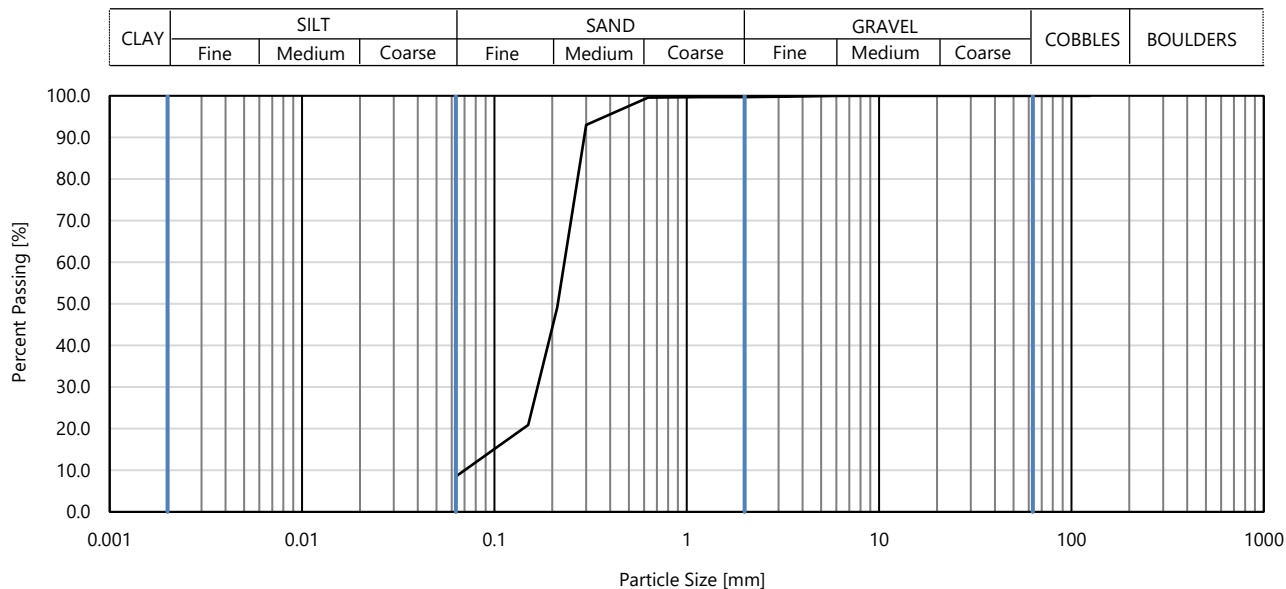
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.30
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	30



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	93		
0.212	49		
0.150	21		
0.0630	9		

Dry Mass of Sample [g]	1016
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	91.2
Fines <0.063mm	8.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.231
D30 [mm]	0.168
D10 [mm]	0.07
Coefficient of Uniformity	3.3
Coefficient of Curvature	1.7

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

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LABORATORY TEST CERTIFICATE

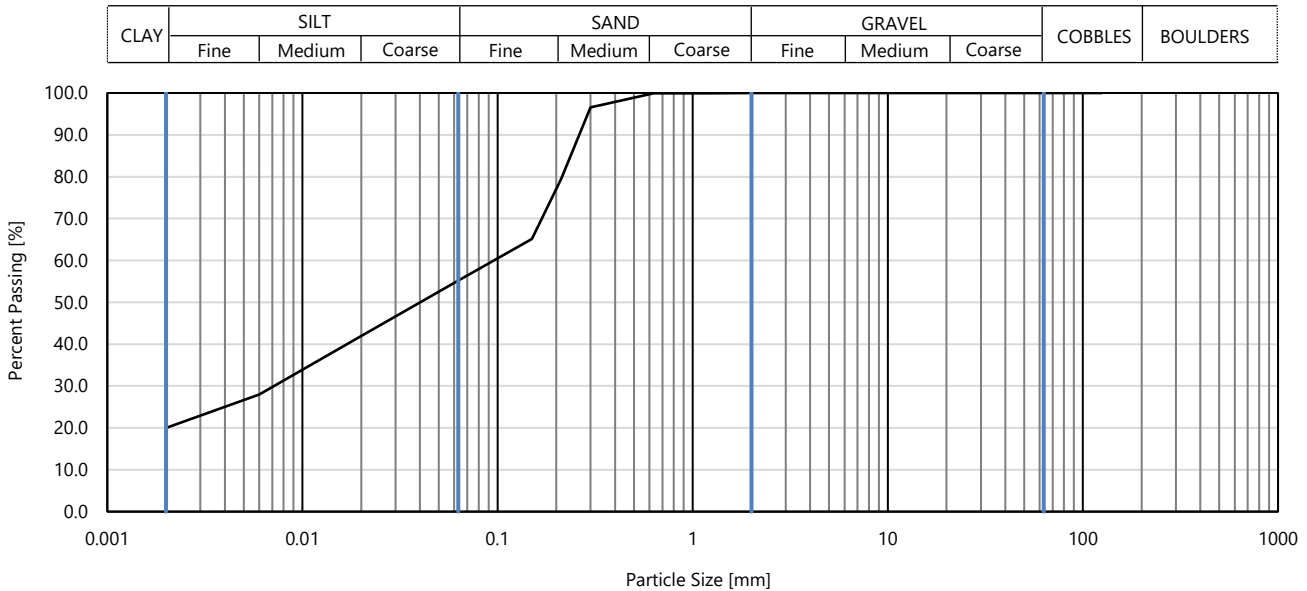
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.80
Specimen Description	Brown sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	37



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	42
90.0	100	0.00600	28
75.0	100	0.00200	20
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	97		
0.212	80		
0.150	65		
0.0630	55		

Dry Mass of Sample [g]	920
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	44.8
Silt	35.2
Clay	20.0

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.096
D30 [mm]	0.00738
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

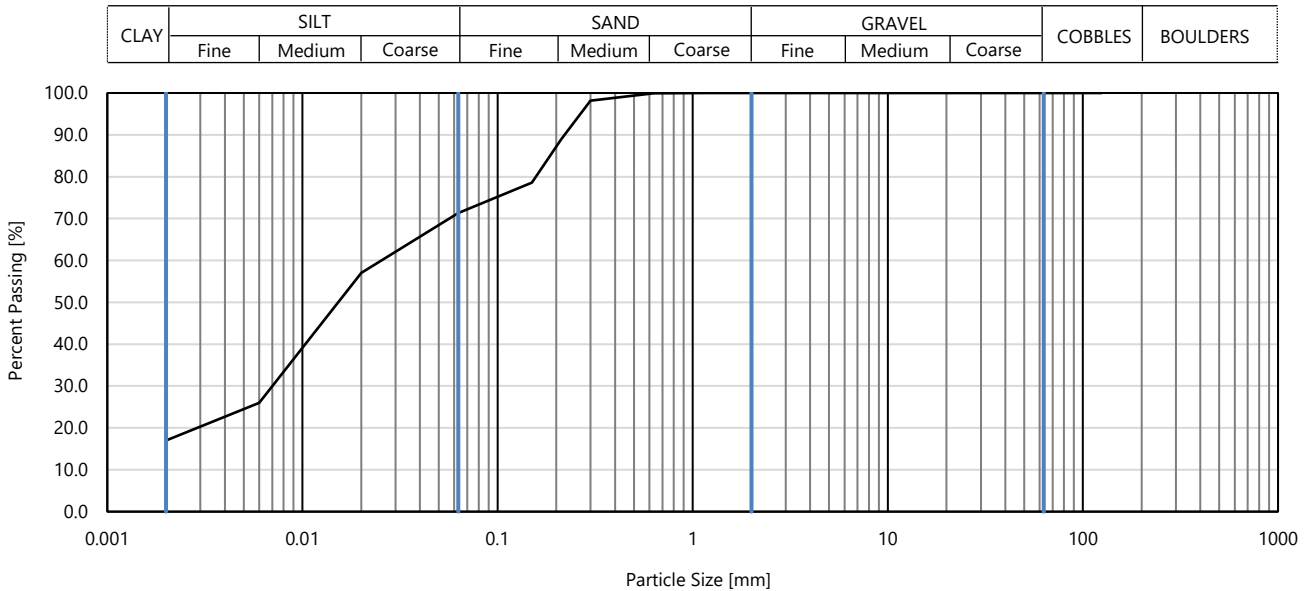
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	BH106
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	12.80
Specimen Description	Brown slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	40



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	57
90.0	100	0.00600	26
75.0	100	0.00200	17
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	89		
0.150	79		
0.0630	71		

Dry Mass of Sample [g]	785
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	28.7
Silt	53.9
Clay	17.4

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.0259
D30 [mm]	0.00714
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

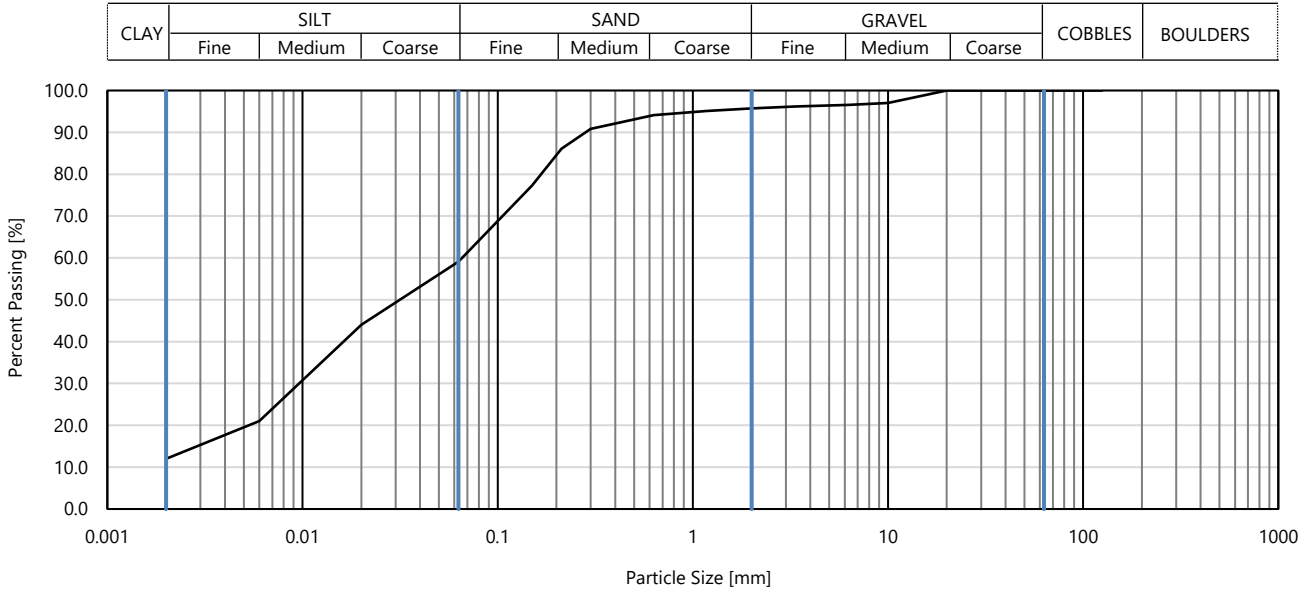
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	DS107
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Black slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	8



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	44
90.0	100	0.00600	21
75.0	100	0.00200	12
63.0	100		
37.5	100		
20.0	100		
10.0	97		
6.30	97		
3.35	96		
2.00	96		
1.18	95		
0.630	94		
0.300	91		
0.212	86		
0.150	77		
0.0630	59		

Dry Mass of Sample [g]	838
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	4.3
Sand	36.6
Silt	47.3
Clay	11.8

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.0659
D30 [mm]	0.00958
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	20/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	20/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

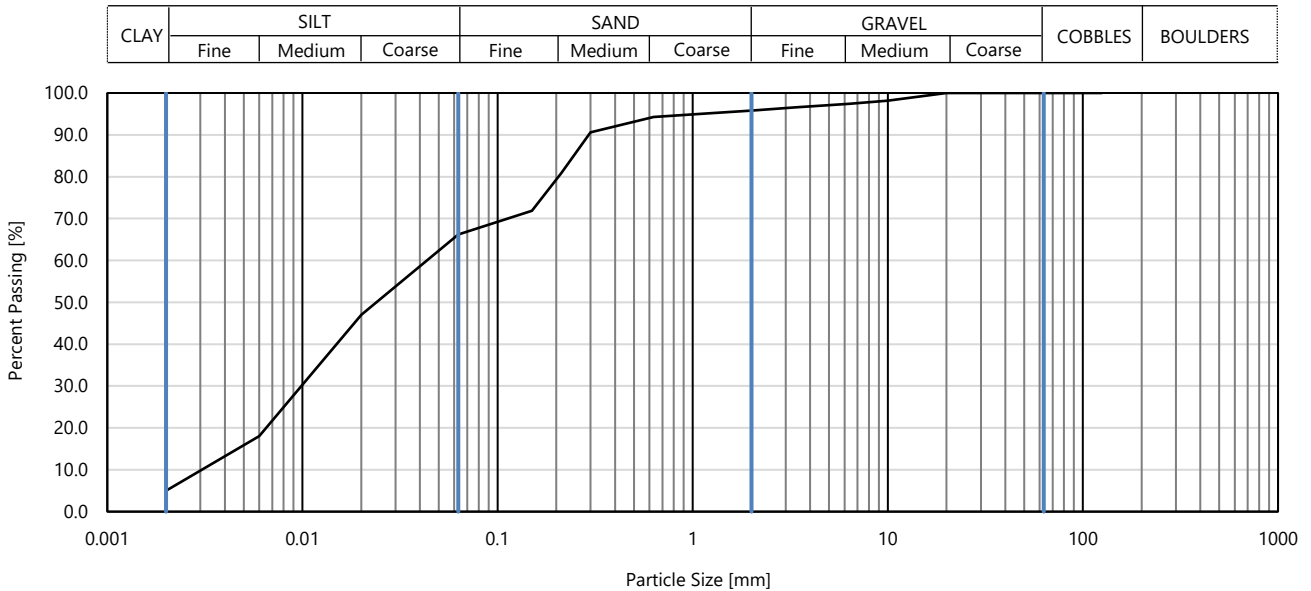
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	DS108
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.40
Specimen Description	Black slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	5



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	47
90.0	100	0.00600	18
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	98		
6.30	97		
3.35	97		
2.00	96		
1.18	95		
0.630	94		
0.300	91		
0.212	81		
0.150	72		
0.0630	66		

Dry Mass of Sample [g]	768
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	4.2
Sand	29.6
Silt	61.6
Clay	4.6

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.0438
D30 [mm]	0.00997
D10 [mm]	0.00313
Coefficient of Uniformity	14
Coefficient of Curvature	0.73

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

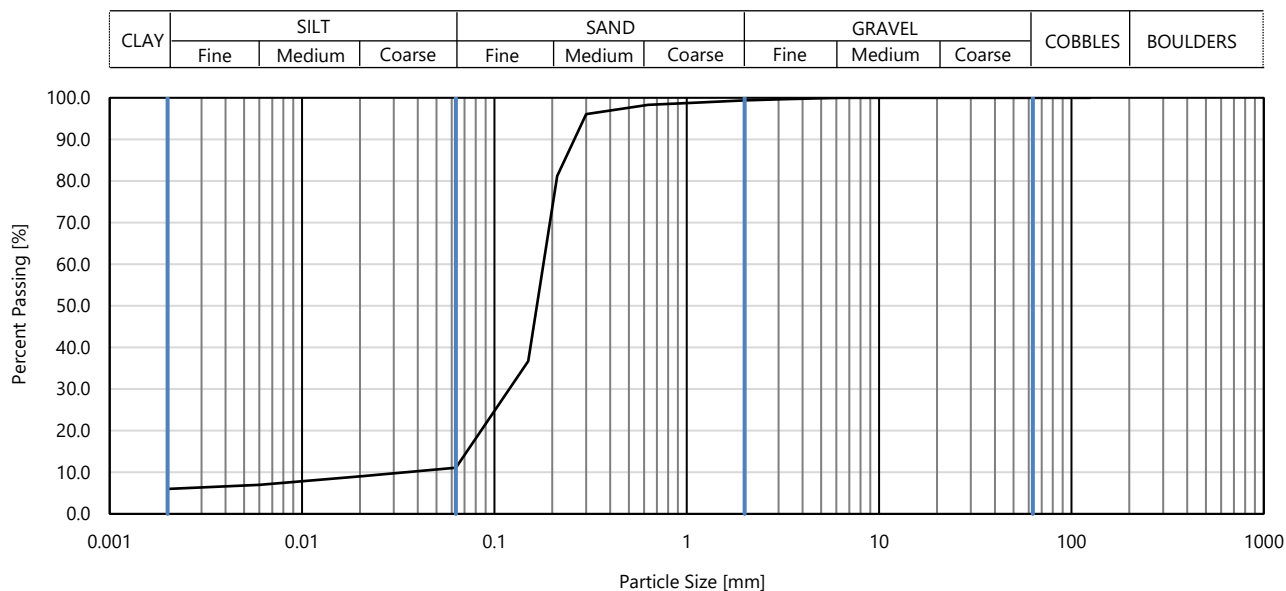
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	9
90.0	100	0.00600	7
75.0	100	0.00200	6
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	99		
1.18	99		
0.630	98		
0.300	96		
0.212	81		
0.150	37		
0.0630	11		

Dry Mass of Sample [g]	1062
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.6
Sand	88.2
Silt	5.4
Clay	5.8

Grading Analysis	
D100 [mm]	10
D60 [mm]	0.18
D30 [mm]	0.119
D10 [mm]	0.0375
Coefficient of Uniformity	4.8
Coefficient of Curvature	2.1

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

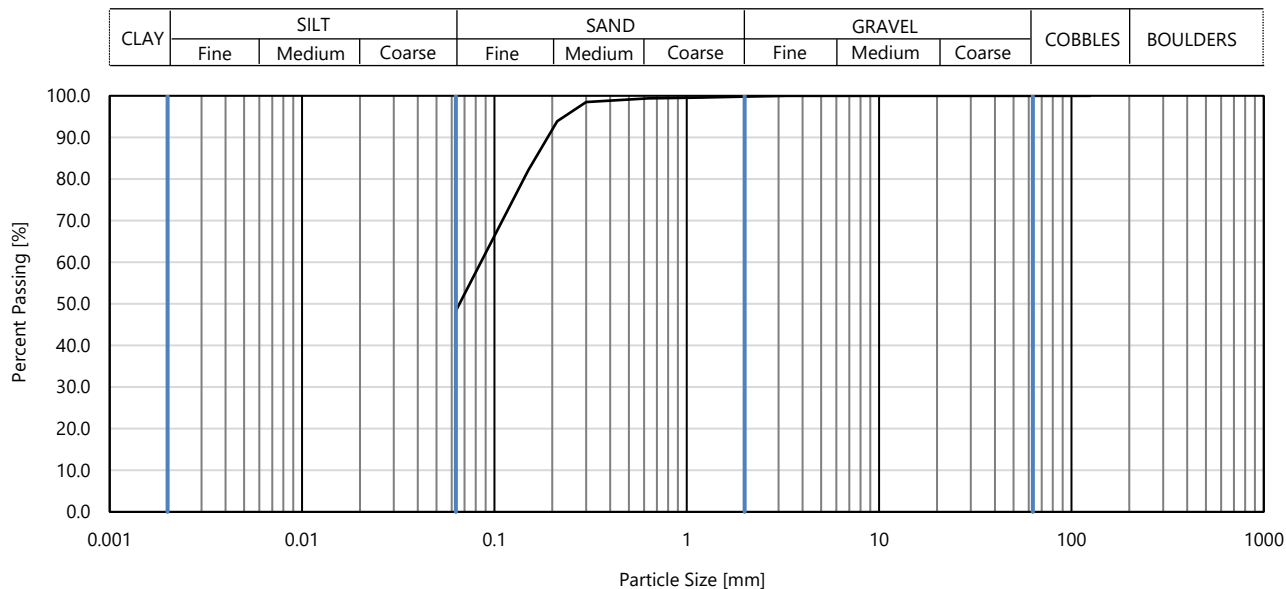
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.00
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	19



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	99		
0.212	94		
0.150	82		
0.0630	48		

Dry Mass of Sample [g]	871
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	51.5
Fines <0.063mm	48.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.0851
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

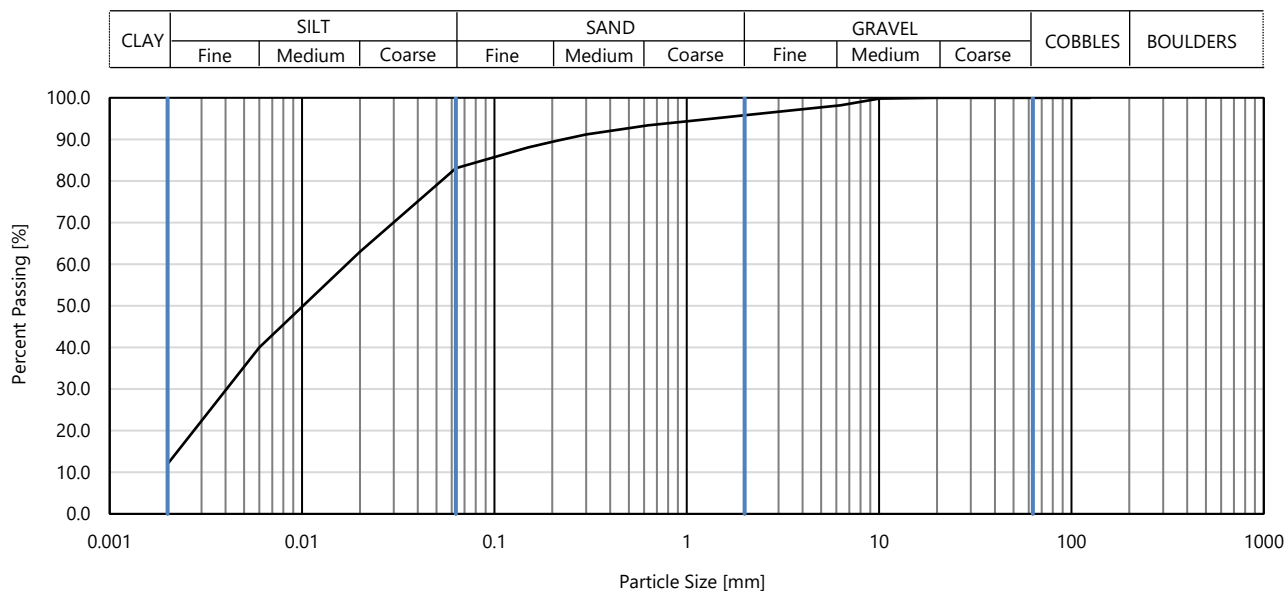
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	10.90
Specimen Description	Brown slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	27



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	63
90.0	100	0.00600	40
75.0	100	0.00200	12
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	98		
3.35	97		
2.00	96		
1.18	95		
0.630	93		
0.300	91		
0.212	90		
0.150	88		
0.0630	83		

Dry Mass of Sample [g]	827
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	4.2
Sand	12.7
Silt	71.5
Clay	11.6

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.0171
D30 [mm]	0.00408
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

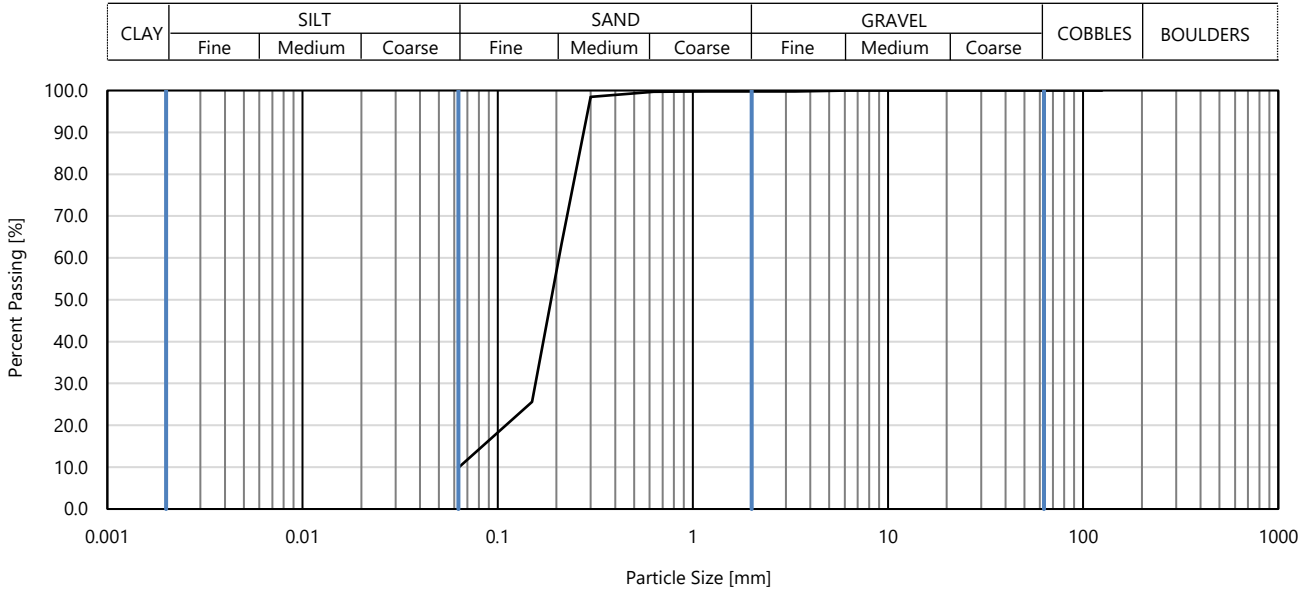
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	0.70
Specimen Description	Brown slightly gravelly silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	99		
0.212	63		
0.150	26		
0.0630	10		

Dry Mass of Sample [g]	792
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	89.9
Fines <0.063mm	9.9

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.206
D30 [mm]	0.156
D10 [mm]	0.0633
Coefficient of Uniformity	3.3
Coefficient of Curvature	1.9

Issue Date	24/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/01/2023
Remarks:	Combined with B12 @ 1.00m				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

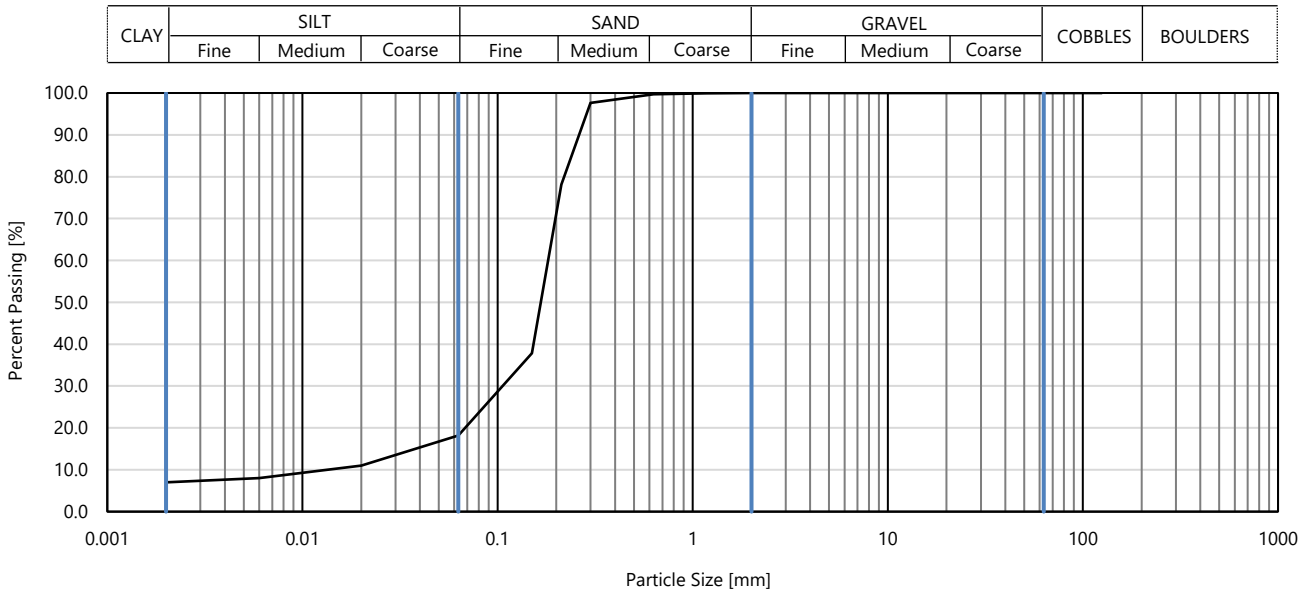
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	11
90.0	100	0.00600	8
75.0	100	0.00200	7
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	98		
0.212	78		
0.150	38		
0.0630	18		

Dry Mass of Sample [g]	754
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	81.8
Silt	11.1
Clay	7.1

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.181
D30 [mm]	0.106
D10 [mm]	0.0131
Coefficient of Uniformity	14
Coefficient of Curvature	4.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

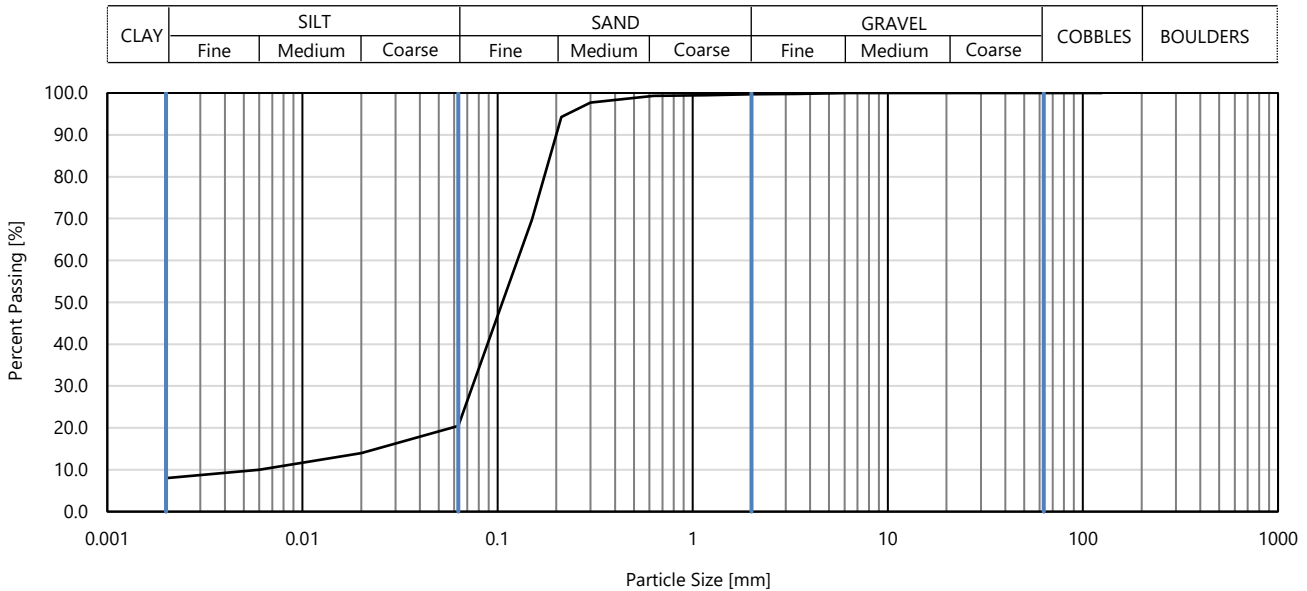
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.80
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	15



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	14
90.0	100	0.00600	10
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	98		
0.212	94		
0.150	70		
0.0630	21		

Dry Mass of Sample [g]	986
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.3
Sand	79.2
Silt	12.1
Clay	8.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.126
D30 [mm]	0.0745
D10 [mm]	0.00604
Coefficient of Uniformity	21
Coefficient of Curvature	7.3

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

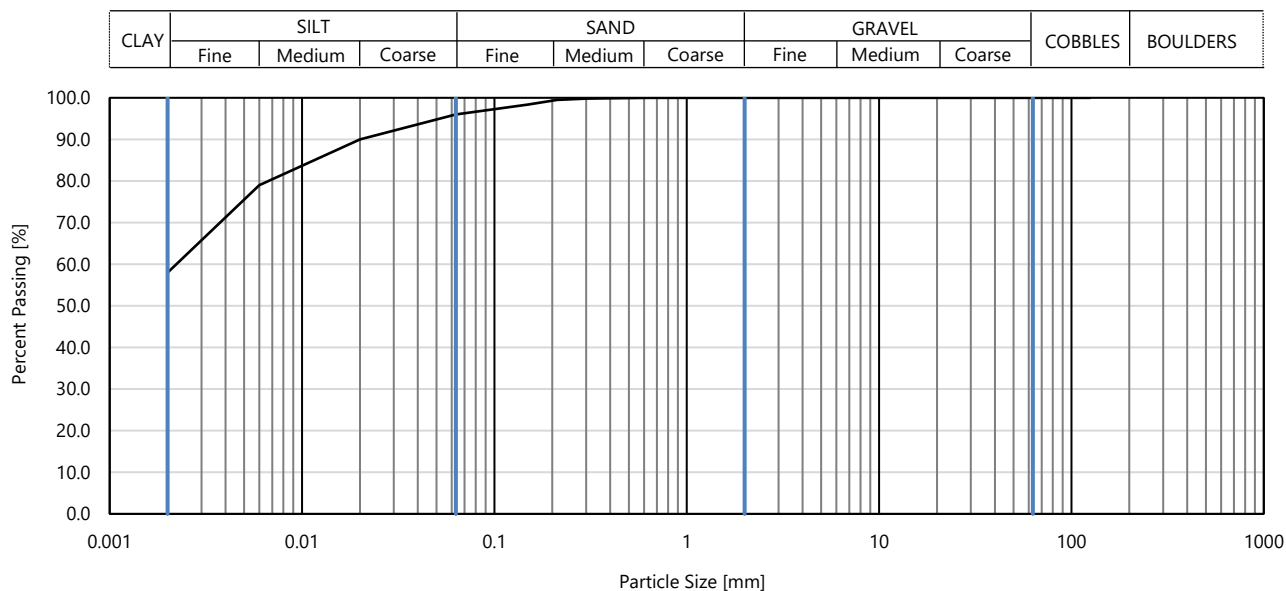
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	90
90.0	100	0.00600	79
75.0	100	0.00200	58
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	100		
0.212	100		
0.150	98		
0.0630	96		

Dry Mass of Sample [g]	573
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	4.0
Silt	38.3
Clay	57.7

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.00225
D30 [mm]	-
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

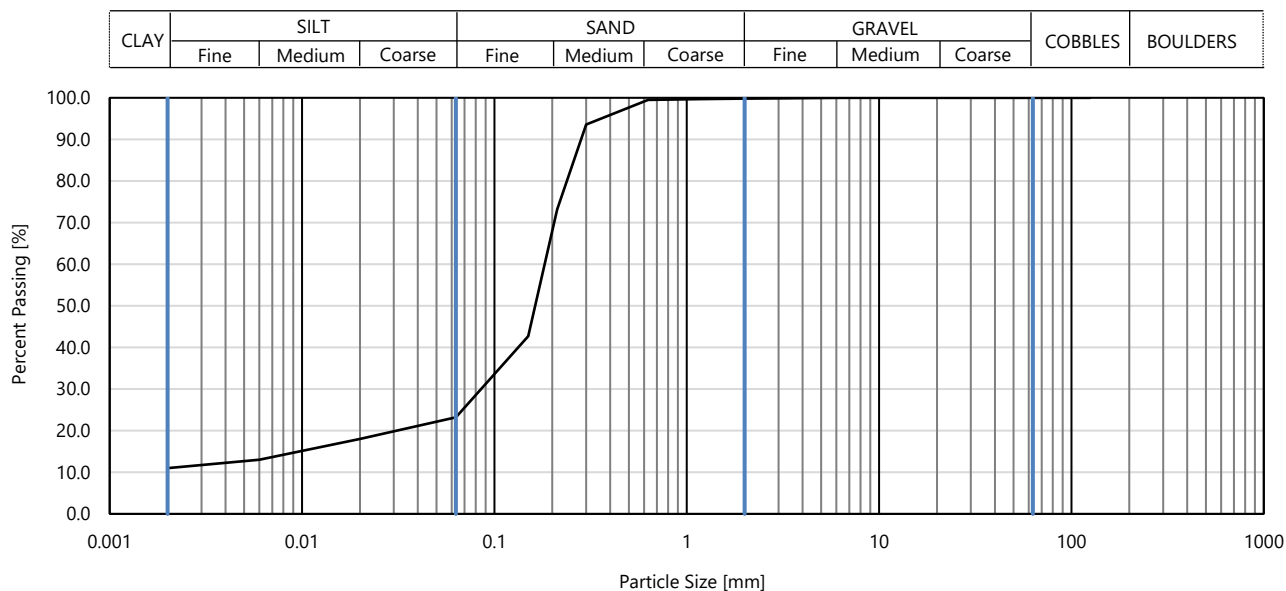
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	6.30
Specimen Description	Brown slightly gravelly very clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	29



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	18
90.0	100	0.00600	13
75.0	100	0.00200	11
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	94		
0.212	73		
0.150	43		
0.0630	23		

Dry Mass of Sample [g]	857
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	76.6
Silt	12.7
Clay	10.5

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.182
D30 [mm]	0.0853
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	02/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

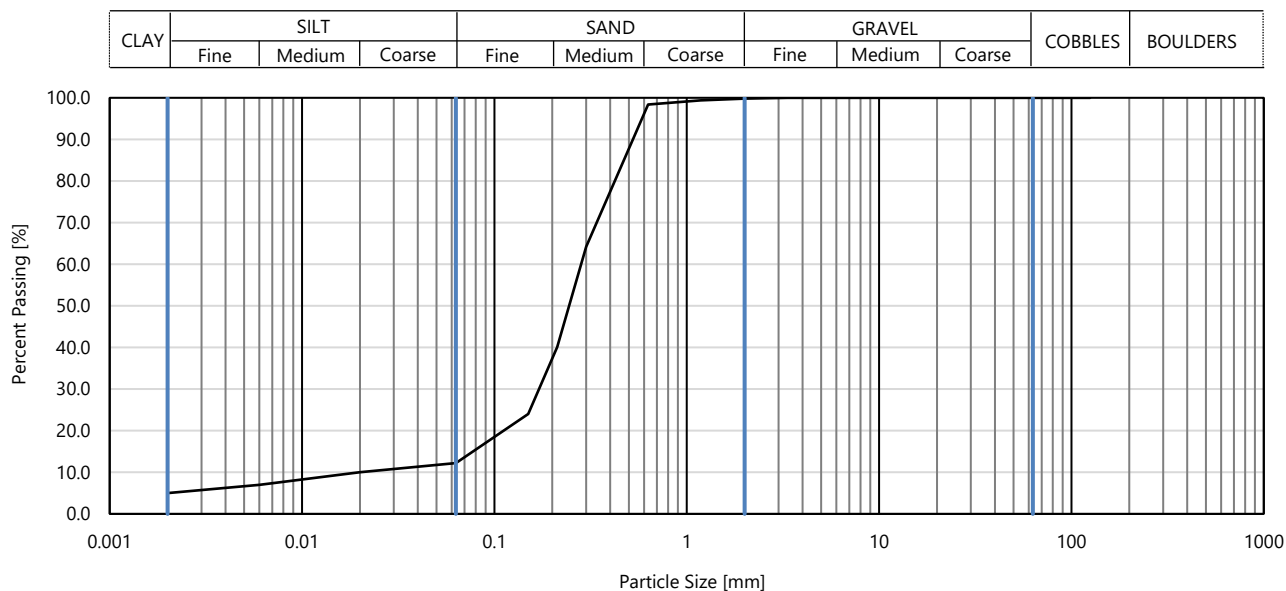
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	8.30
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	10
90.0	100	0.00600	7
75.0	100	0.00200	5
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	99		
0.630	98		
0.300	64		
0.212	40		
0.150	24		
0.0630	12		

Dry Mass of Sample [g]	896
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.2
Sand	87.5
Silt	7.0
Clay	5.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.282
D30 [mm]	0.171
D10 [mm]	0.0234
Coefficient of Uniformity	12
Coefficient of Curvature	4.4

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

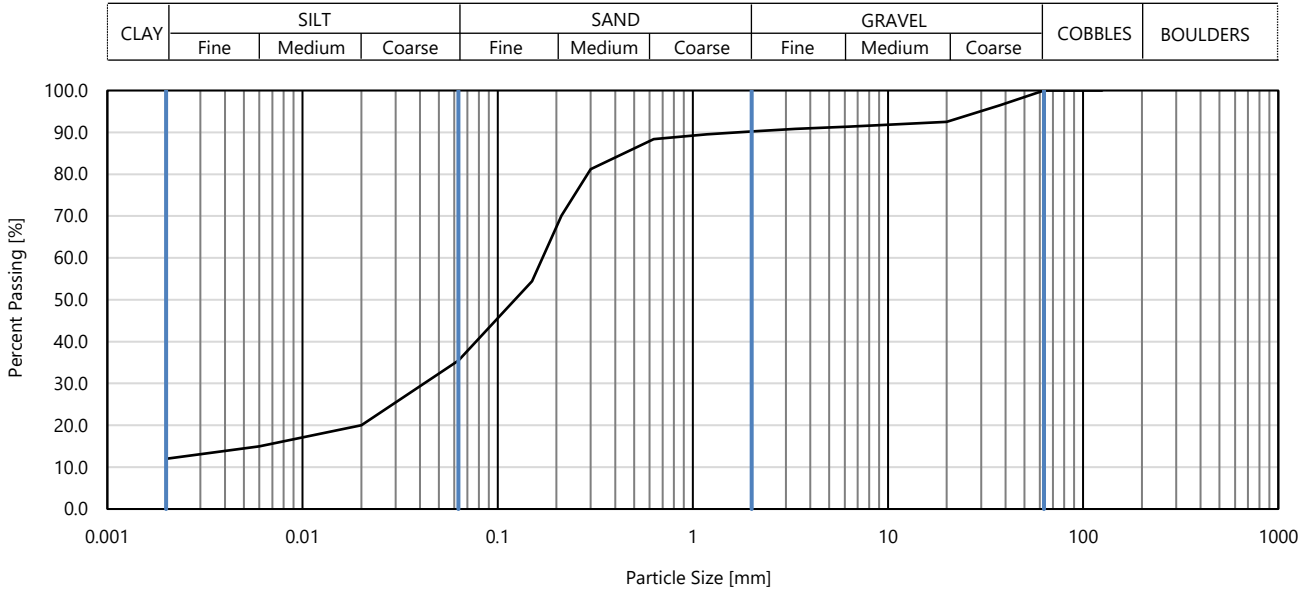
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	1.20
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference	Specimen Depth [m]	Sample Reference	8



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	20
90.0	100	0.00600	15
75.0	100	0.00200	12
63.0	100		
37.5	97		
20.0	93		
10.0	92		
6.30	91		
3.35	91		
2.00	90		
1.18	90		
0.630	88		
0.300	81		
0.212	70		
0.150	54		
0.0630	36		

Dry Mass of Sample [g]	6499
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	9.8
Sand	54.7
Silt	23.6
Clay	11.9

Grading Analysis	
D100 [mm]	63
D60 [mm]	0.17
D30 [mm]	0.0415
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)	Authorised Date	17/01/2023		
Remarks:	Insufficient material to comply with the recommended minimum mass.				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

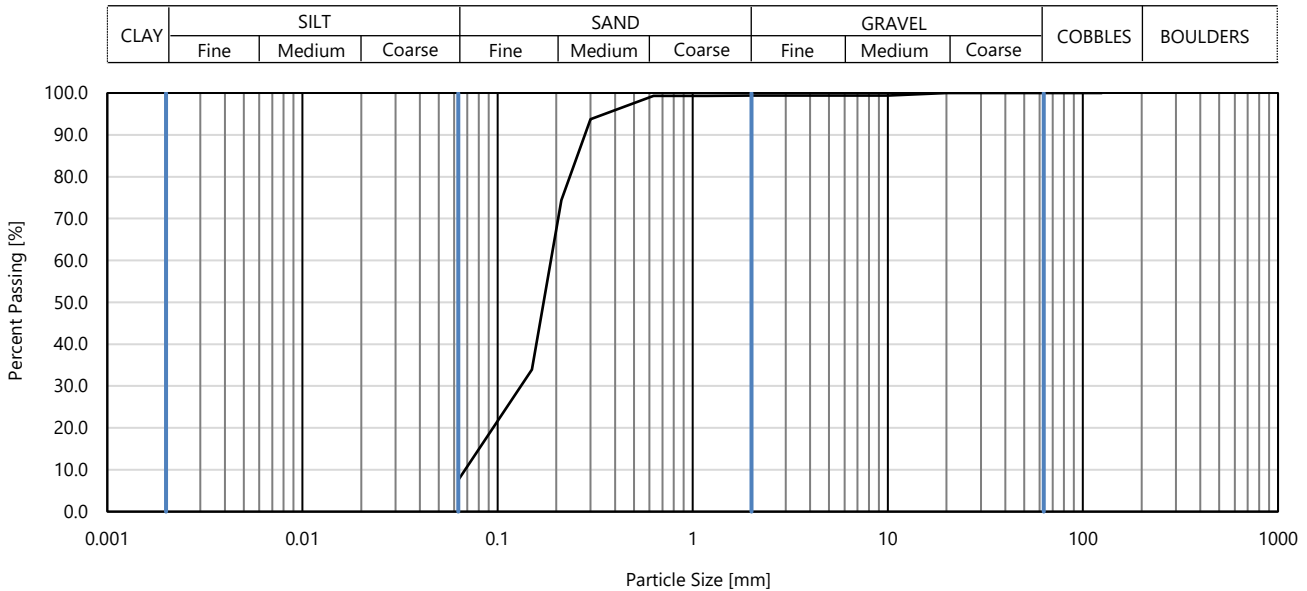
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.80
Specimen Description	Brown slightly gravelly clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	14



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	99		
6.30	99		
3.35	99		
2.00	99		
1.18	99		
0.630	99		
0.300	94		
0.212	74		
0.150	34		
0.0630	8		

Dry Mass of Sample [g]	1001
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.6
Sand	91.8
Fines <0.063mm	7.6

Grading Analysis	
D100 [mm]	20
D60 [mm]	0.187
D30 [mm]	0.132
D10 [mm]	0.0683
Coefficient of Uniformity	2.7
Coefficient of Curvature	1.4

Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

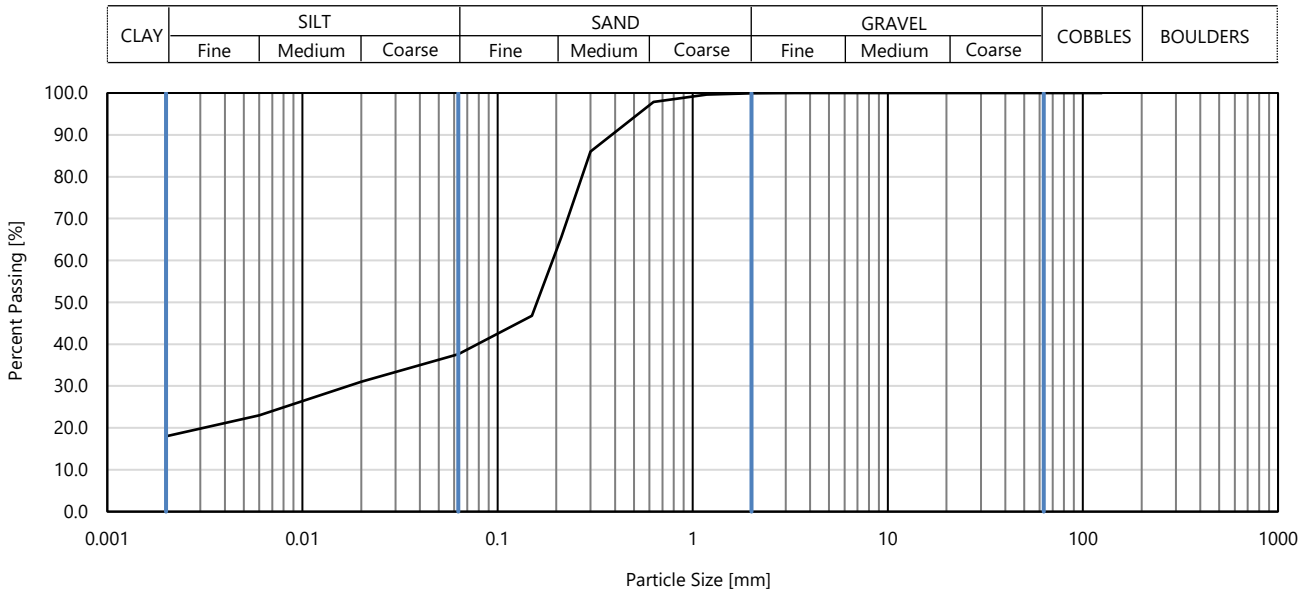
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Brown slightly gravelly sandy CLAY	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	17



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	31
90.0	100	0.00600	23
75.0	100	0.00200	18
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	98		
0.300	86		
0.212	66		
0.150	47		
0.0630	38		

Dry Mass of Sample [g]	832
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	62.3
Silt	19.3
Clay	18.3

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.191
D30 [mm]	0.0165
D10 [mm]	-
Coefficient of Uniformity	Not applicable
Coefficient of Curvature	Not applicable

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

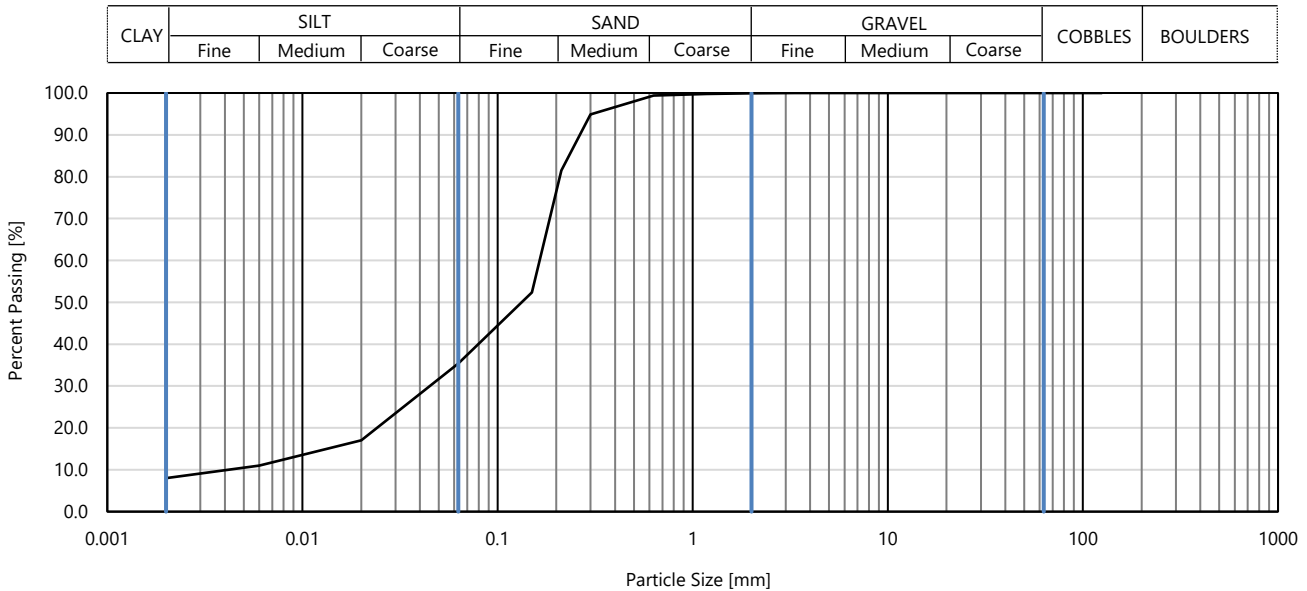
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	4.80
Specimen Description	Brown slightly gravelly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	20



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	17
90.0	100	0.00600	11
75.0	100	0.00200	8
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	99		
0.300	95		
0.212	82		
0.150	52		
0.0630	35		

Dry Mass of Sample [g]	961
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.1
Sand	64.5
Silt	27.0
Clay	8.4

Grading Analysis	
D100 [mm]	6.3
D60 [mm]	0.164
D30 [mm]	0.0454
D10 [mm]	0.00424
Coefficient of Uniformity	39
Coefficient of Curvature	3

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

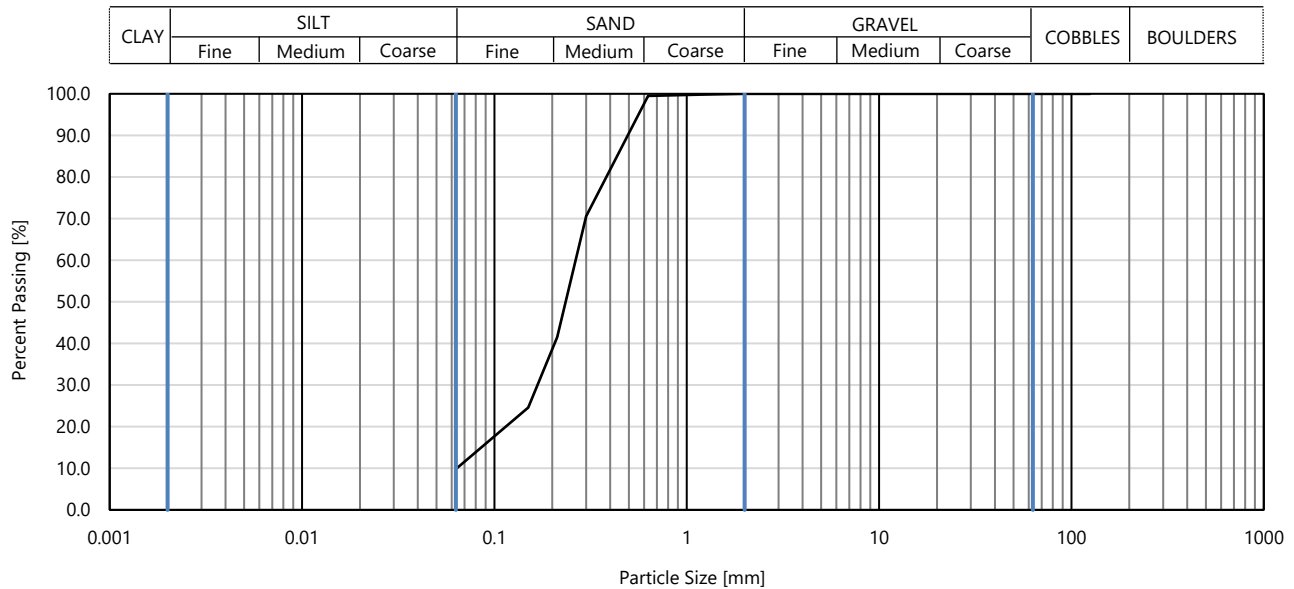
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clause 5.2

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.30
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	29



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100		
90.0	100		
75.0	100		
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	71		
0.212	42		
0.150	25		
0.0630	10		

Dry Mass of Sample [g]	878
Particle Density [Mg/m ³]	

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	90.2
Fines <0.063mm	9.8

Grading Analysis	
D100 [mm]	2
D60 [mm]	0.264
D30 [mm]	0.168
D10 [mm]	0.0637
Coefficient of Uniformity	4.2
Coefficient of Curvature	1.7

Issue Date	10/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	10/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

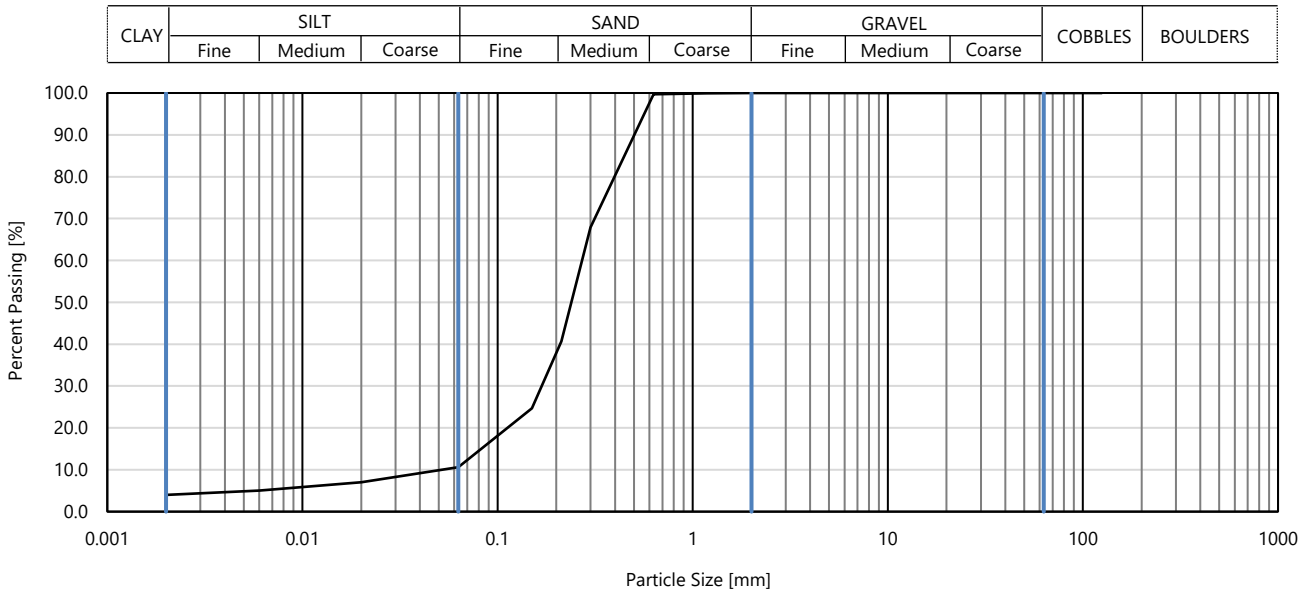
Determination of Particle Size Distribution



1483

BS EN ISO 17892-4:2016 Clauses 5.2 and 5.4

Project Reference	F212561	Location ID	HR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.30
Specimen Description	Brown clayey SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	33



Sieving		Sedimentation	
Particle Size [mm]	Passing [%]	Particle Size [mm]	Passing [%]
125	100	0.0200	7
90.0	100	0.00600	5
75.0	100	0.00200	4
63.0	100		
37.5	100		
20.0	100		
10.0	100		
6.30	100		
3.35	100		
2.00	100		
1.18	100		
0.630	100		
0.300	68		
0.212	41		
0.150	25		
0.0630	11		

Dry Mass of Sample [g]	1042
Particle Density [Mg/m ³]	2.70 assumed

Sample Proportions	Dry Mass [%]
Very coarse	0.0
Gravel	0.0
Sand	89.4
Silt	6.3
Clay	4.3

Grading Analysis	
D100 [mm]	3.35
D60 [mm]	0.271
D30 [mm]	0.168
D10 [mm]	0.0528
Coefficient of Uniformity	5.1
Coefficient of Curvature	2

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Linear Shrinkage

BS1377 : Part 2 : 1990, clause 6.5

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown slightly sandy silty CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16

Test Data	
Date of Test	30/11/2022
Preparation	Specimen prepared from natural material
Material <425µm [%]	100
Linear Shrinkage [%]	9

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Linear Shrinkage

BS1377 : Part 2 : 1990, clause 6.5

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	2.00
Specimen Description	Brown slightly sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13

Test Data	
Date of Test	30/11/2022
Preparation	Specimen prepared from natural material
Material <425µm [%]	100
Linear Shrinkage [%]	12

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Linear Shrinkage

BS1377 : Part 2 : 1990, clause 6.5

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.00
Specimen Description	Brown sandy CLAY	Sample Type	D
Specimen Reference		Specimen Depth [m]	
		Sample Reference	16

Test Data	
Date of Test	30/11/2022
Preparation	Specimen prepared from natural material
Material <425µm [%]	100
Linear Shrinkage [%]	6

Issue Date	11/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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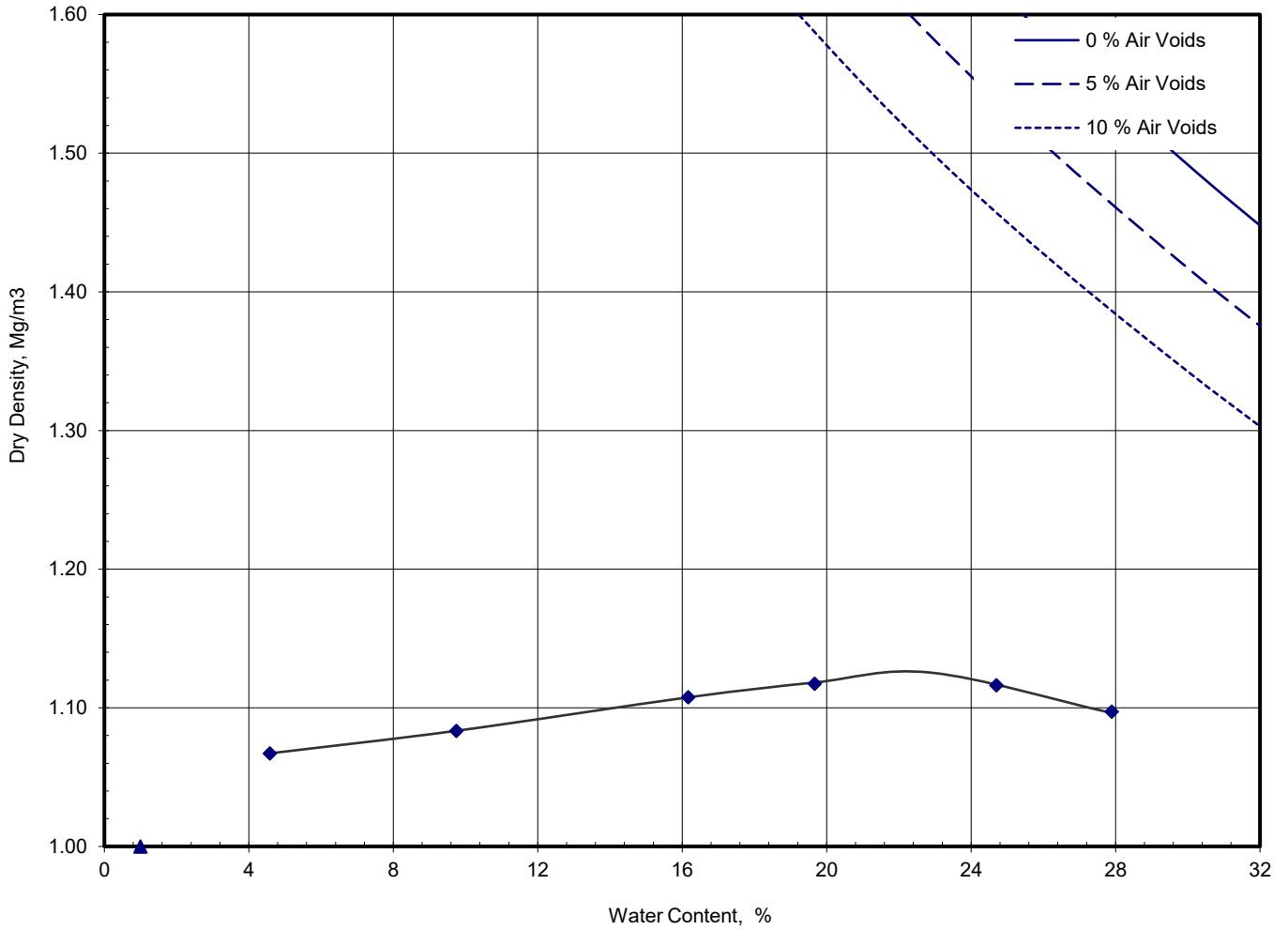




Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction

Project No.	F212561
Hole	BH101
Sample No	5
Depth	0.50 m
Sample Type	B
Keylab ID	klid202211224

Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	
Specimen Ref.	Specimen Depth	m
Description	Brown slightly clayey SAND	
Test Method	BS 1377-4:1990 Clause 3.4	



Preparation	Material used was natural	
Mould Type	CBR	
Samples Used	Single sample tested	
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.13
Optimum Water Content	%	22.0

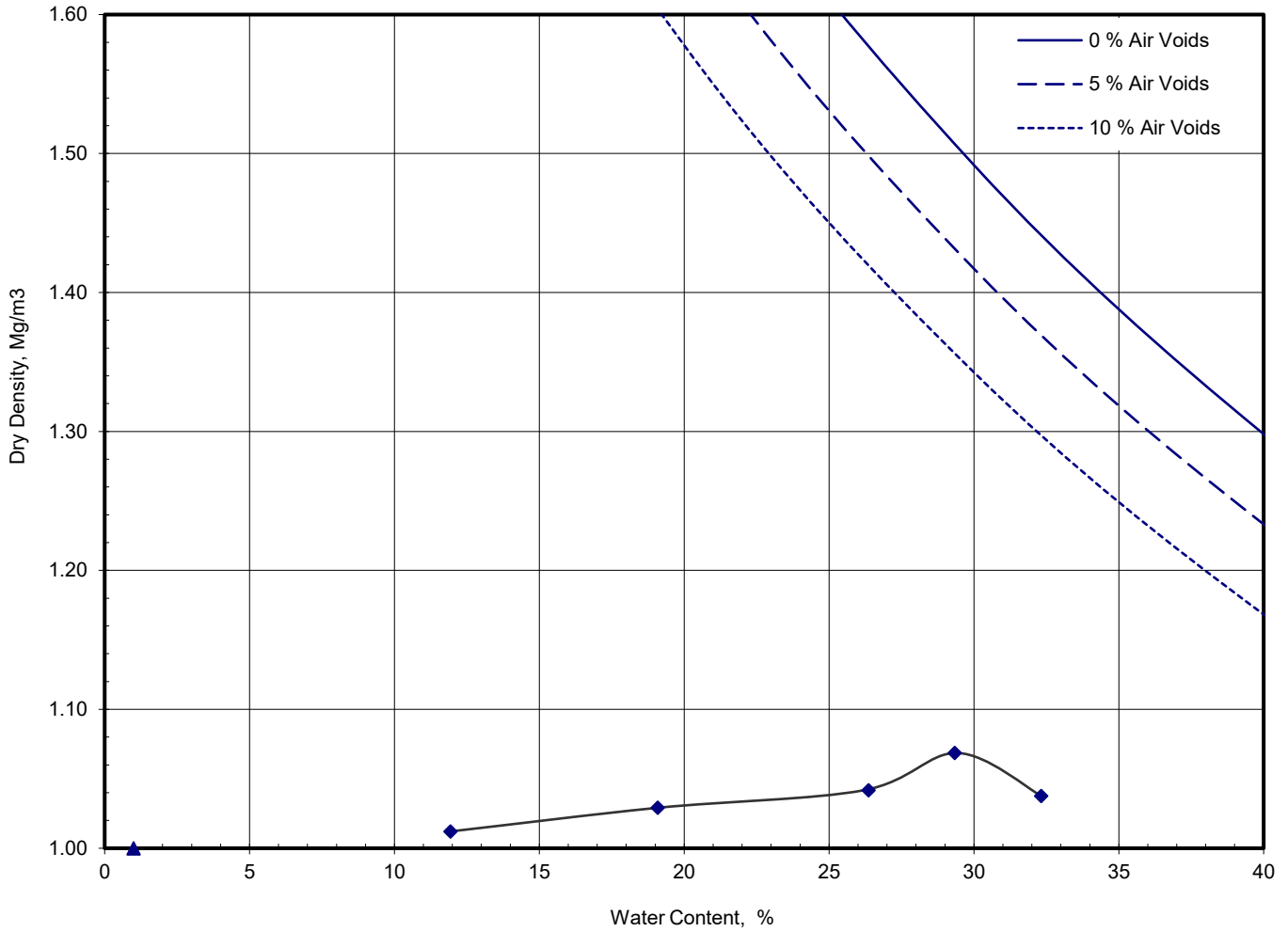
Remarks	Date printed	Figure Number	
	20/01/2023		



**Determination of Dry Density /
Water Content Relationship
Light (2.5kg) Compaction**

Project No.	F212561
Hole	BH101
Sample No	16
Depth	3.50 m
Sample Type	B
Keylab ID	klid202211220

Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	
Specimen Ref.	Specimen Depth	m
Description	Grey slightly clayey SAND	
Test Method	BS 1377-4:1990 Clause 3.3	



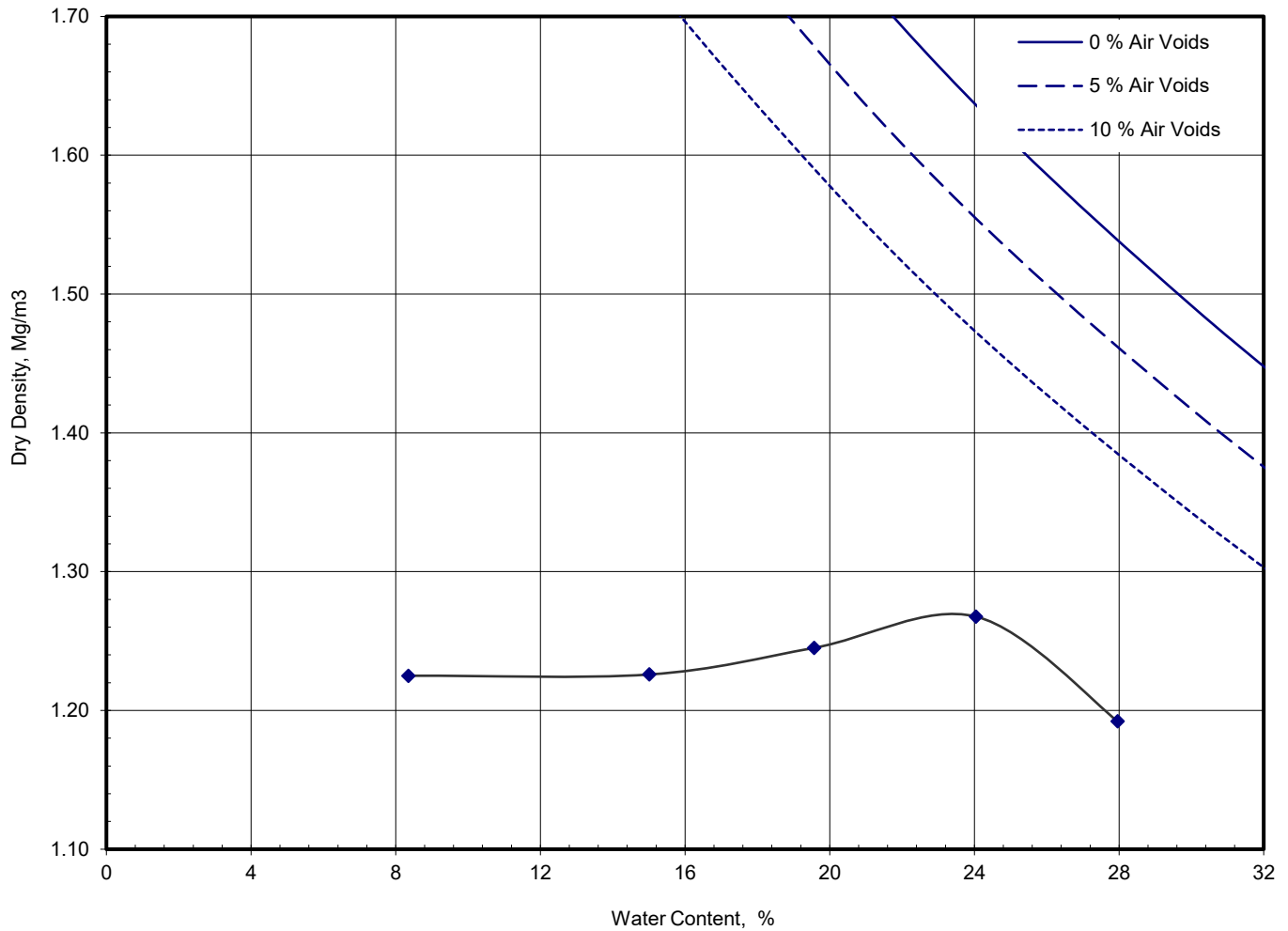
Preparation	Material used was natural	
Mould Type	1 LITRE	
Samples Used	Single sample tested	
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.07
Optimum Water Content	%	29.0

Remarks	Date printed	Figure Number	
	20/01/2023		



Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction

	Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction		Project No.	F212561	
			Hole	DS107	
			Sample No	8	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth	0.40 m	
Specimen Ref.		Specimen Depth	m	Sample Type	B
Description	Grey slightly gravelly sandy SILT		Keylab ID	ADS1220927006	
Test Method	BS 1377-4:1990 Clause 3.3				



Preparation	Material used was natural	
Mould Type	1 LITRE	
Samples Used	Single sample tested	
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.27
Optimum Water Content	%	23.0

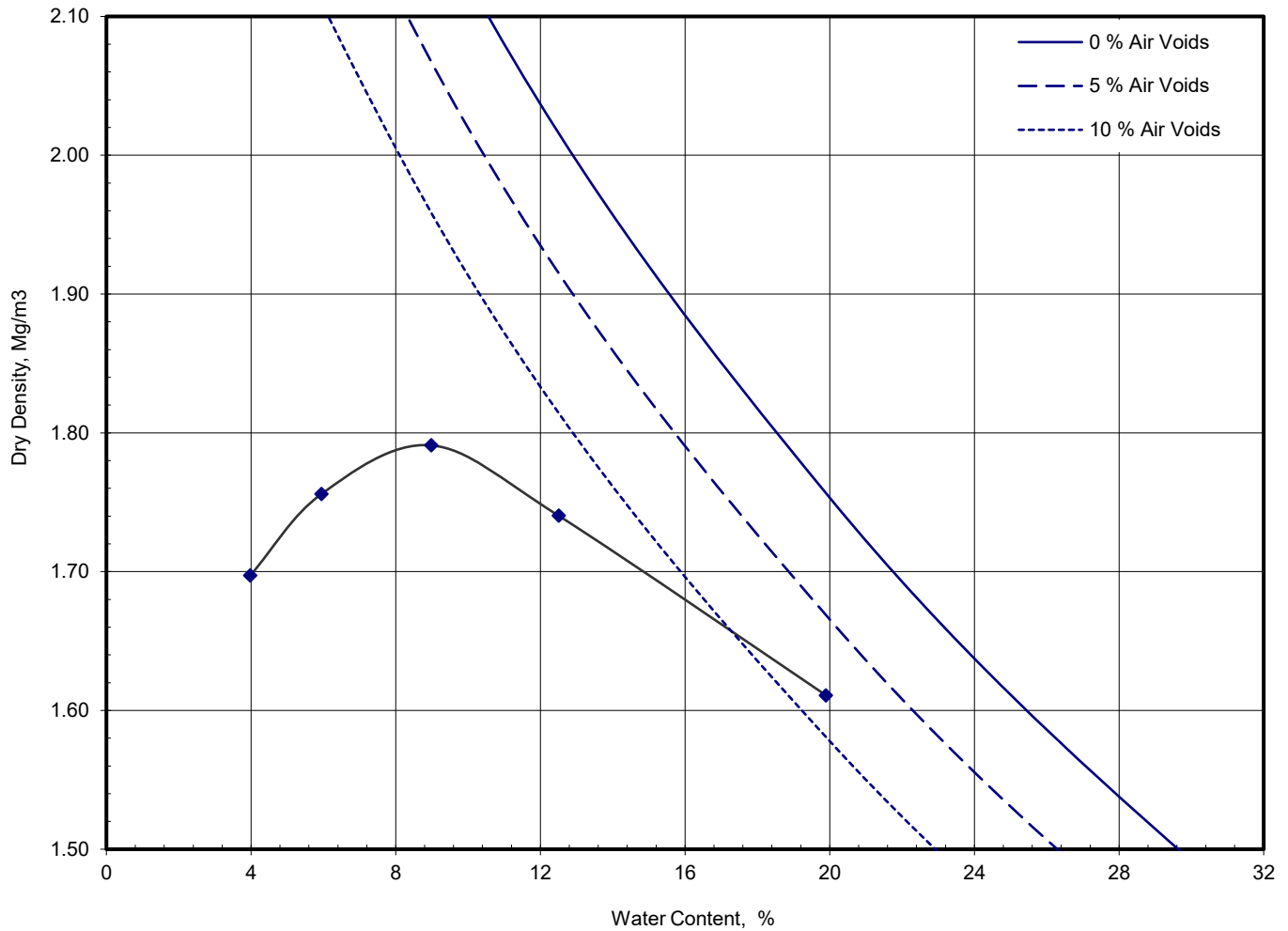
Remarks	Date printed	Figure Number	
	20/01/2023		



Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction

Project No.	F212561
Hole	AR-BH01
Sample No	11
Depth	2.00 m
Sample Type	B
Keylab ID	ADS4220921012

Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	
Specimen Ref.	Specimen Depth	m
Description	Brown silty SAND	
Test Method	BS 1377-4:1990 Clause 3.4	



Preparation	-2146826273
Mould Type	CBR
Samples Used	
Material Retained on 37.5 mm Sieve	% 0
Material Retained on 20.0 mm Sieve	% 0
Particle Density - Assumed	Mg/m³ 2.70
Maximum Dry Density	Mg/m³ 1.79
Optimum Water Content	% 8.7

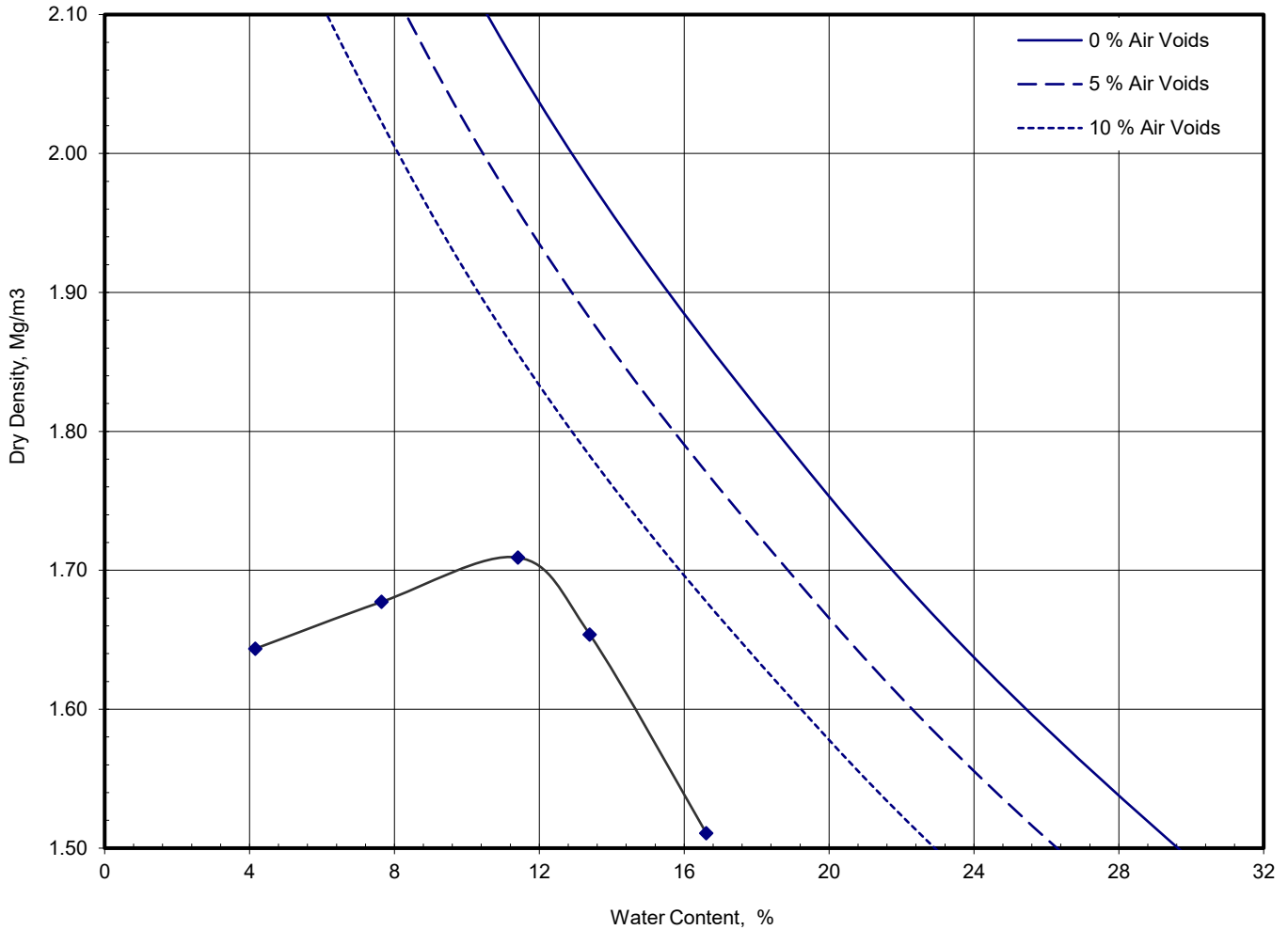
Remarks	Date printed	Figure Number	
	24/01/2023		



Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction

Project No.	F212561
Hole	AR-BH02
Sample No	9
Depth	0.70 m
Sample Type	B
Keylab ID	F-JGO0WB-KXTM

Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	
Specimen Ref.	Specimen Depth	m
Description	Brown silty SAND	
Test Method	BS 1377-4:1990 Clause 3.3	



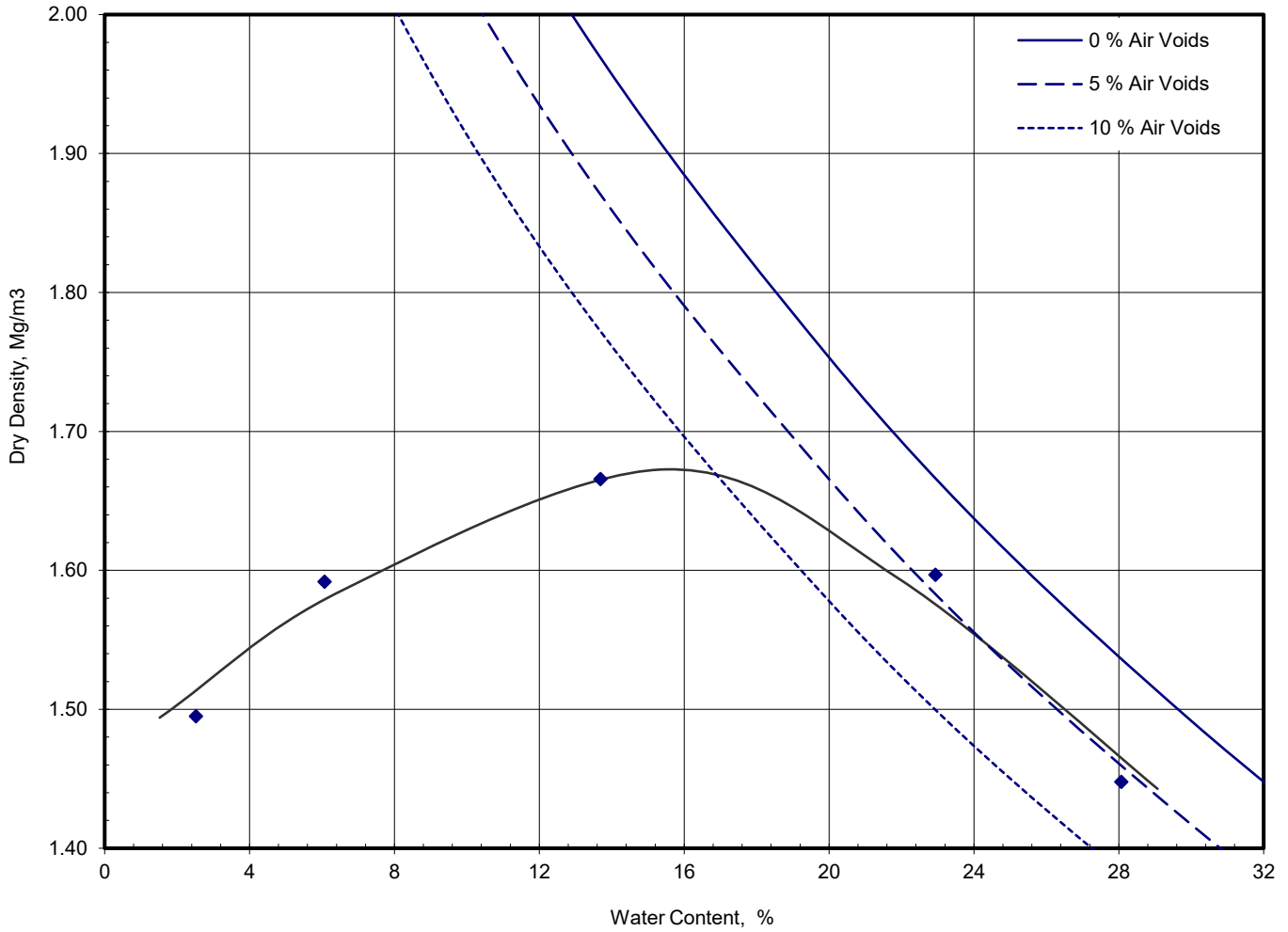
Preparation	Material used was natural	
Mould Type	1 LITRE	
Samples Used		
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.71
Optimum Water Content	%	11.0

Remarks	Date printed	Figure Number	
	24/01/2023		



Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction

	Determination of Dry Density / Water Content Relationship Light (2.5kg) Compaction		Project No.	F212561	
			Hole	HR-BH01	
			Sample No	6	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth	0.70 m	
Specimen Ref.		Specimen Depth	m	Sample Type	B
Description	Brown sandy SILT		Keylab ID	F-PS8SWB-NZ60	
Test Method	BS 1377-4:1990 Clause 3.4				



Preparation	Material used was natural	
Mould Type	CBR	
Samples Used	Single sample tested	
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.70
Maximum Dry Density	Mg/m³	1.67
Optimum Water Content	%	16.0

Remarks	Date printed 20/01/2023	Figure Number	
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California Bearing Ratio (CBR)

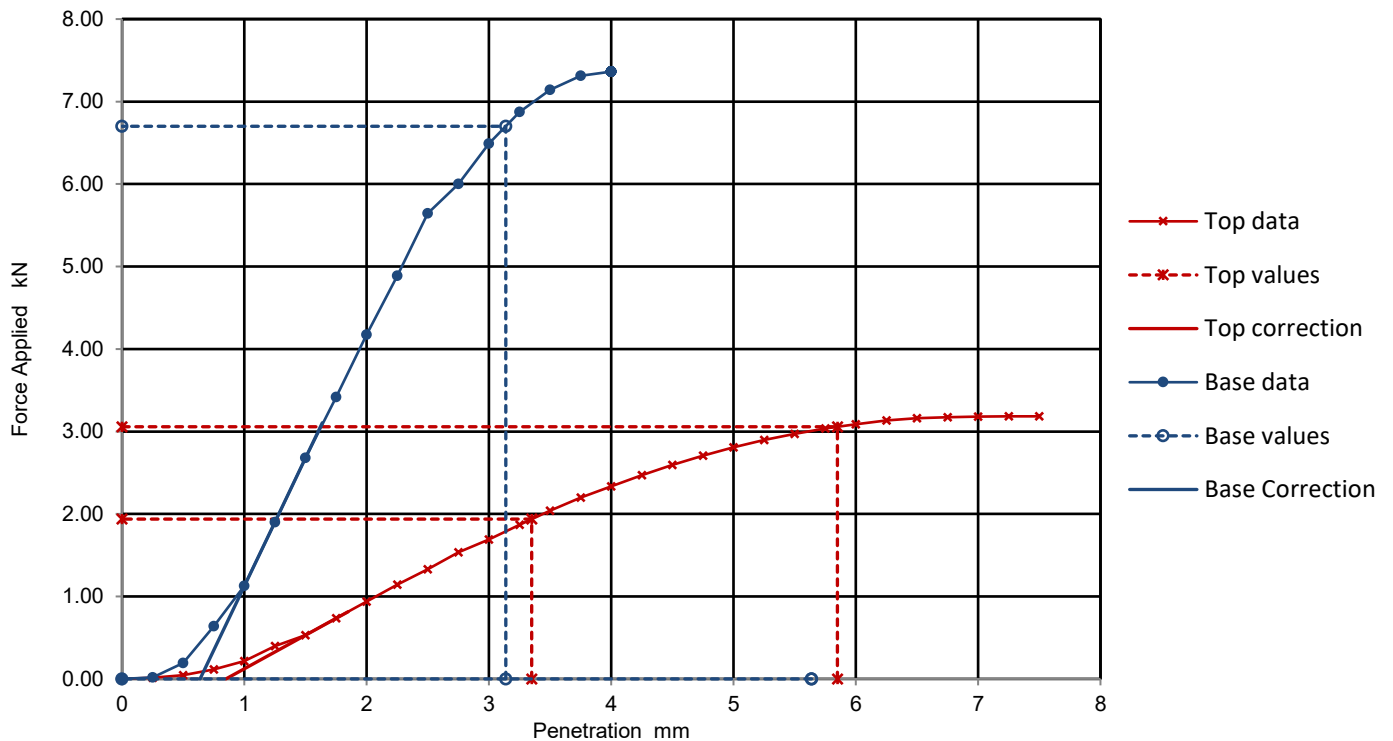
Project No.	F212561
Hole	AR-BH01
Sample No.	11
Depth	2.00 m
Sample Type	B
Keylab ID	ADS4220921012
CBR Test Number	1

Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation
Specimen Ref.	Specimen Depth _____ m
Description	Brown silty SAND
Test Method	BS 1377-4:1990 Clause 7

Specimen Preparation

Condition	REMOULDED	Soaking details	Not soaked
Details	Recompacted to specified density using 2.5kg rammer	Period of soaking	days
		Time to surface	days
		Amount of swell recorded	mm
Material retained on 20mm sieve removed	0 %	Dry density after soaking	Mg/m ³
Initial Specimen details	Bulk density	1.93 Mg/m ³	Surcharge applied
	Dry density	1.79 Mg/m ³	6 kg
	Water content	8.0 %	4 kPa

Force v Penetration Plots



Results	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	Yes	15	15	15	8.1	
BASE	Yes	51		51		

Average value is only displayed if the results from each end of the sample are within ±10% of the mean value

Remarks	Date printed	Figure Number	
	24/01/2023		

LABORATORY TEST CERTIFICATE

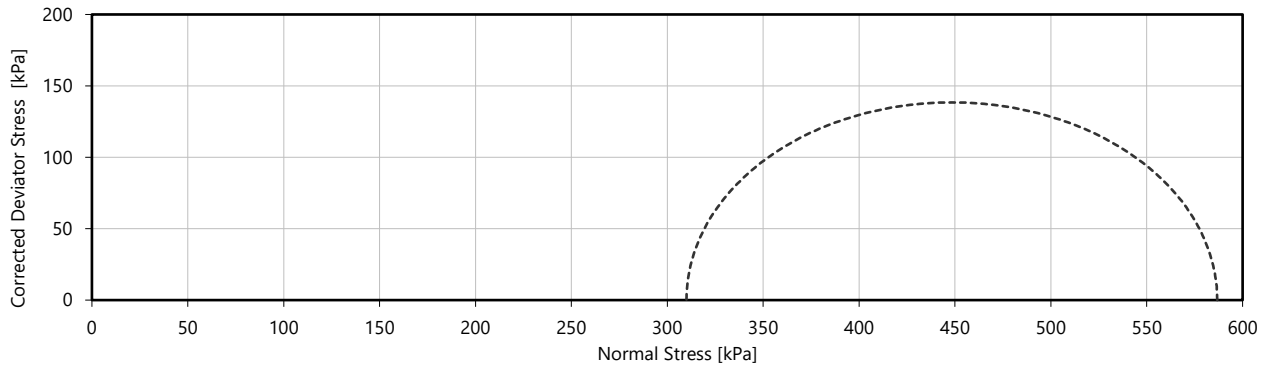
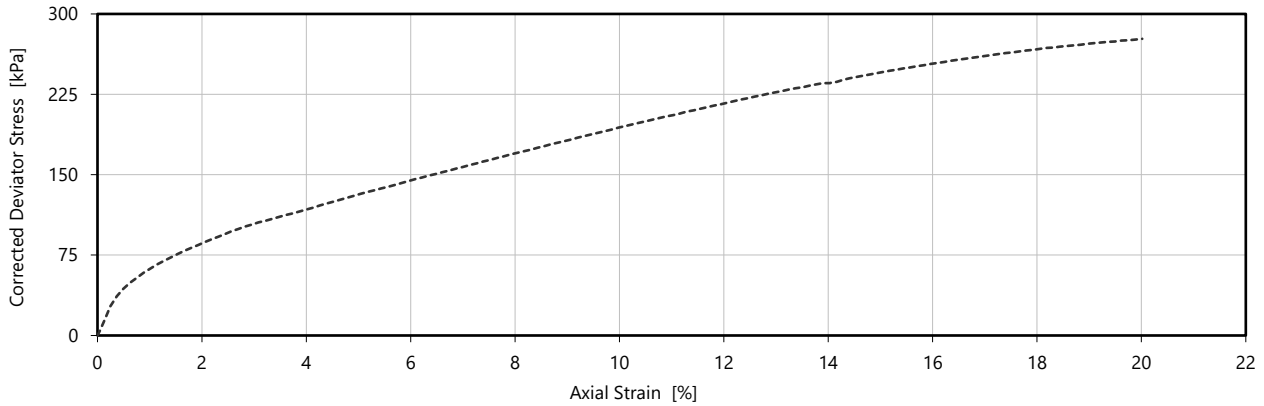
Unconsolidated Undrained Triaxial Test



1483

BS EN ISO 17892-8:2018

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.49
Specimen Description	Stiff brown CLAY with gypsum veins	Sample Type	C
Specimen Reference	Specimen Depth [m]	15.50	Sample Reference
			46



Test number	1		
Specimen Preparation	UNDISTURBED		
Length [mm]	191.79		
Diameter [mm]	101.69		
Bulk Density [Mg/m ³]	2.089		
Specimen Water Content [%]	23.2		
Failure Surface Water Content [%]			
Dry Density [Mg/m ³]	1.696		
Initial Voids Ratio	0.562		
Degree of Saturation [%]	109		
Application of Deviator Stress			
Cell Pressure [kPa]	310		
Specimen Height [mm]	190.03		
Mean Rate of Shear [mm/min]	3.00		
Peak Values			
Undrained Shear Strength [kPa]	138		
Strain at Failure [%]	20.0		
Failure Mode	Plastic		

Issue Date	16/01/2023	Certificate Reference	Issue 1	Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:46
Remarks					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

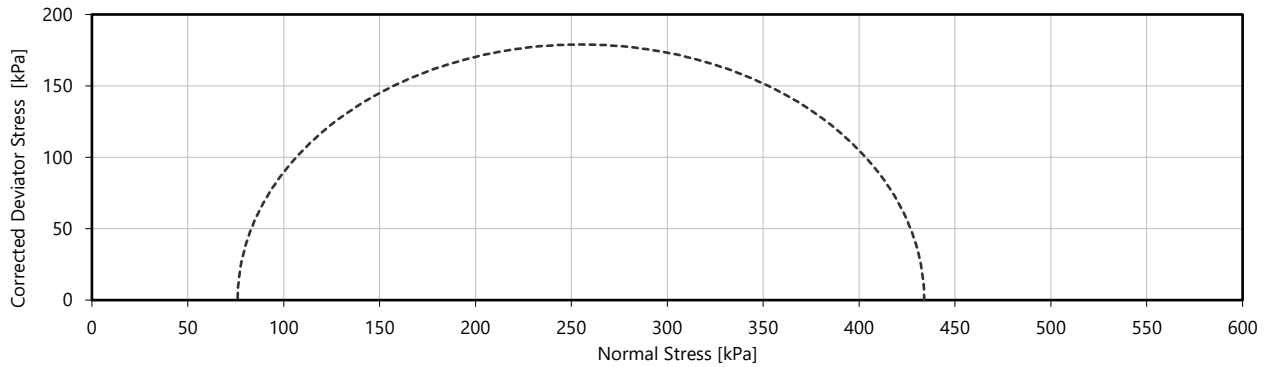
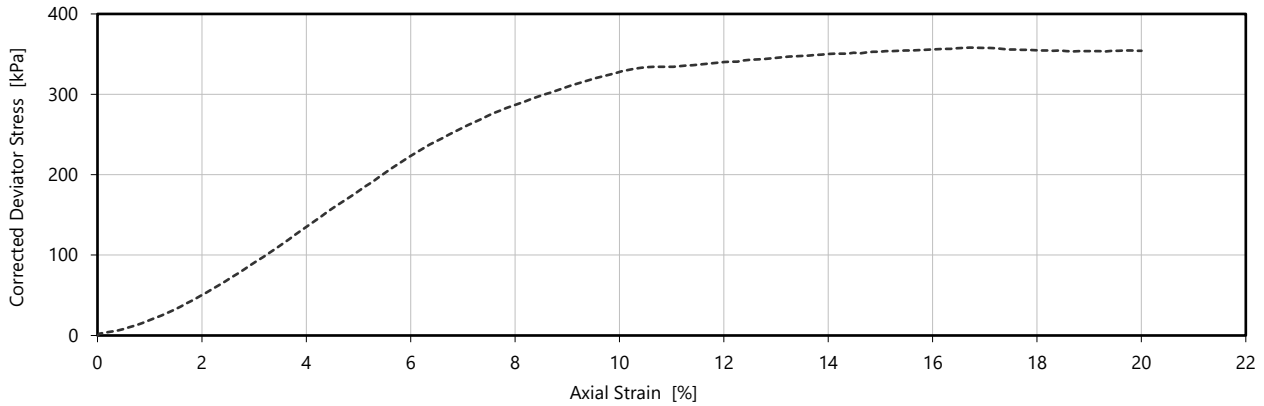
Unconsolidated Undrained Triaxial Test



1483

BS EN ISO 17892-8:2018

Project Reference	F212561	Location ID	MS-BH26
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	3.80
Specimen Description	Soft to firm brown slightly sandy SILT	Sample Type	UT
Specimen Reference		Specimen Depth [m]	3.81
		Sample Reference	14



Test number	1		
Specimen Preparation	UNDISTURBED		
Length [mm]	202.40		
Diameter [mm]	102.09		
Bulk Density [Mg/m ³]	2.123		
Specimen Water Content [%]	22.6		
Failure Surface Water Content [%]			
Dry Density [Mg/m ³]	1.731		
Initial Voids Ratio	0.531		
Degree of Saturation [%]	113		
Application of Deviator Stress			
Cell Pressure [kPa]	76		
Specimen Height [mm]	200.78		
Mean Rate of Shear [mm/min]	3.00		
Peak Values			
Undrained Shear Strength [kPa]	179		
Strain at Failure [%]	16.8		
Failure Mode	Brittle		

Issue Date	16/01/2023	Certificate Reference	Issue 1	Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:48
Remarks					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

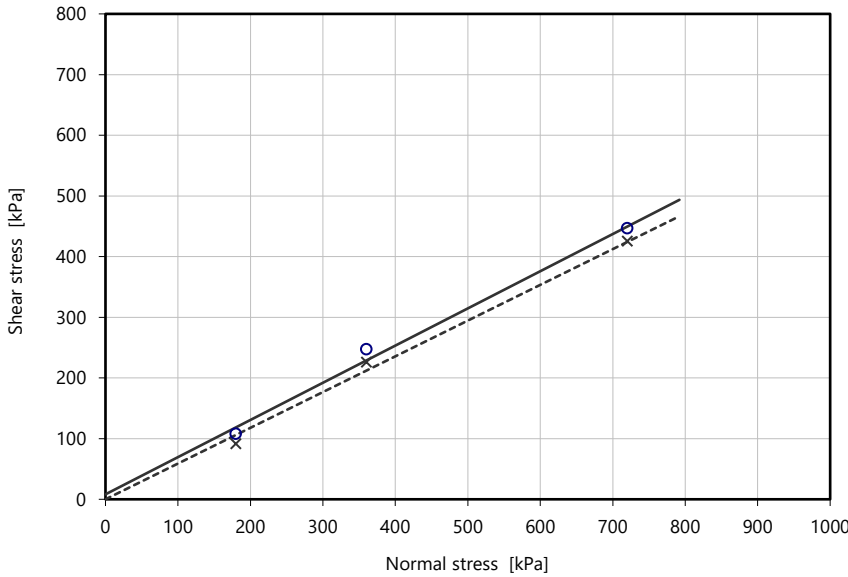
Determination of Shear Strength by Direct Shear (Small Shearbox Apparatus)

BS 1377-7:1990 Clause 4



1483

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Grey slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	28



Shear Strength Parameters	Best Fit	Manual
c' [kPa]	8.2	-
Ø' [degrees]	31.5	-
c _r ' [kPa]	[-8.1]	0
Ø _r ' [degrees]	[31.5]	30.5

Test number	1	2	3		
Particle Density [# indicates assumed value]	#2.65	#2.65	#2.65		
Height [mm]	21.2	21.3	21.2		
Bulk Density [Mg/m ³]	1.54	1.54	1.54		
Initial Moisture Content [%]	32.6	32.6	32.6		
Dry Density [Mg/m ³]	1.16	1.16	1.16		
Initial Voids Ratio	1.282	1.282	1.282		
Degree of Saturation [%]	67.4	67.4	67.4		
Consolidation					
Normal Stress [kPa]	180	360	720		
Change in Height [mm]	-0.848	-0.922	-1.510		
Post consolidation					
Voids Ratio	1.266	1.264	1.253		
Moisture content [%]	37.7	37.1	36.4		
Shearing stage(s)					
Number of Traverses (including peak run)	3	3	3		
Peak Values					
Rate of Displacement [mm/min]	0.065	0.065	0.065		
Relative Horizontal Displacement [mm]	1.94	4.19	3.57		
Shear Stress [kPa]	107.9	247.0	446.3		
Vertical Movement [mm]	-0.75	-1.05	-1.33		
Residual values					
Rate of Displacement [mm/min]	0.065	0.065	0.065		
Relative Horizontal Displacement [mm]	10.91	18.79	20.49		
Shear Stress [kPa]	91.6	225.8	425.1		
Vertical Movement [mm]	0.74	-3.79	1.71		

Issue Date	16/01/2023	Certificate Reference		Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:30
Remarks	Remoulded by tamping				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

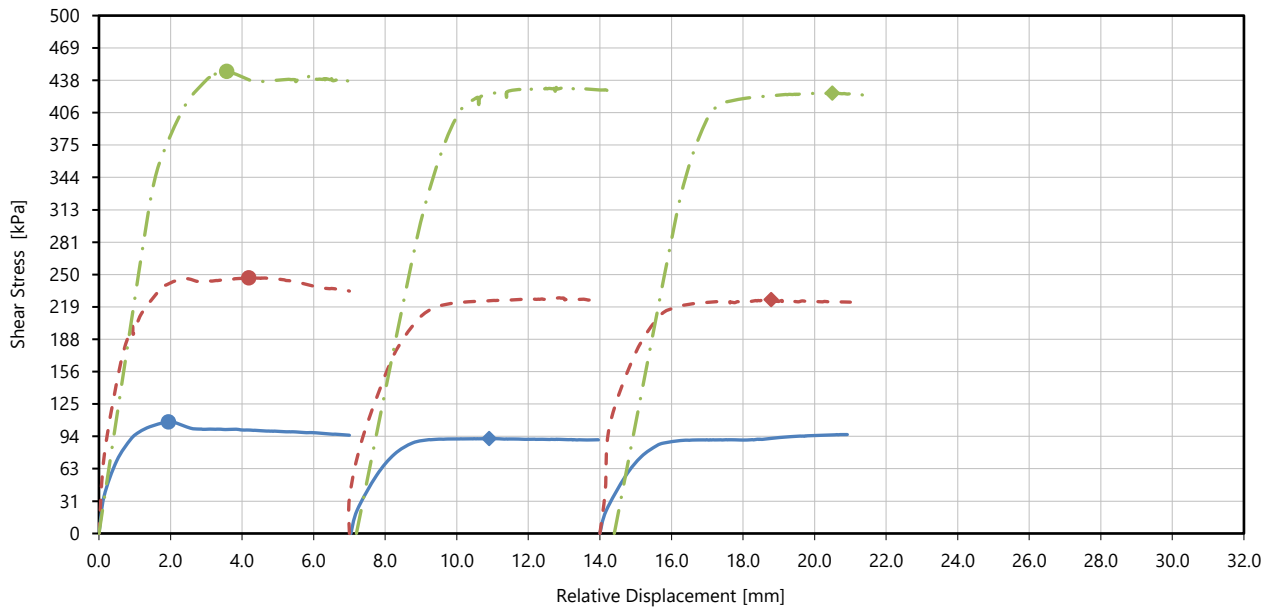
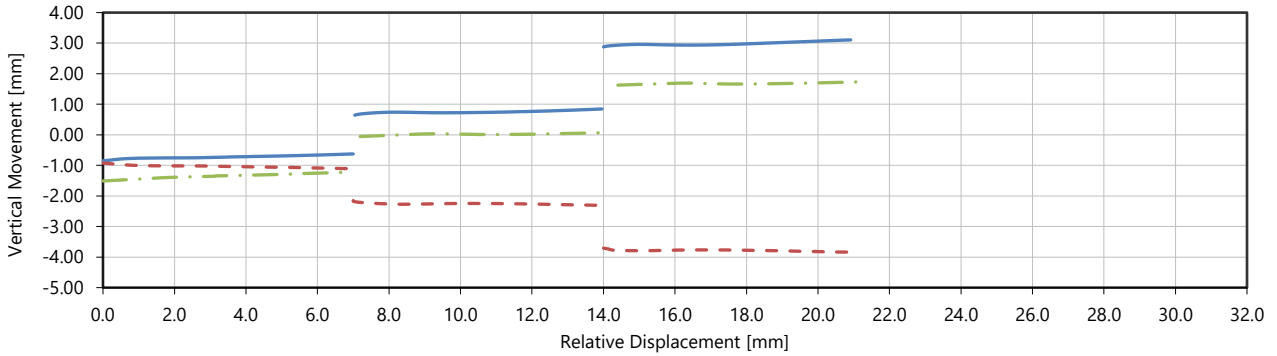
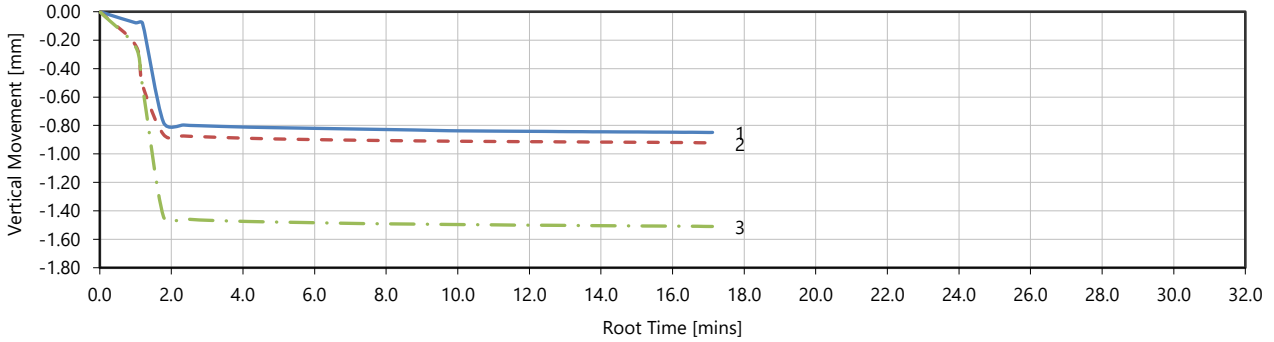
Determination of Shear Strength by Direct Shear (Small Shearbox Apparatus)

BS 1377-7:1990 Clause 4



1483

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	9.00
Specimen Description	Grey slightly gravelly slightly sandy SILT	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	28



Issue Date	16/01/2023	Certificate Reference		Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:30
Remarks	Remoulded by tamping				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

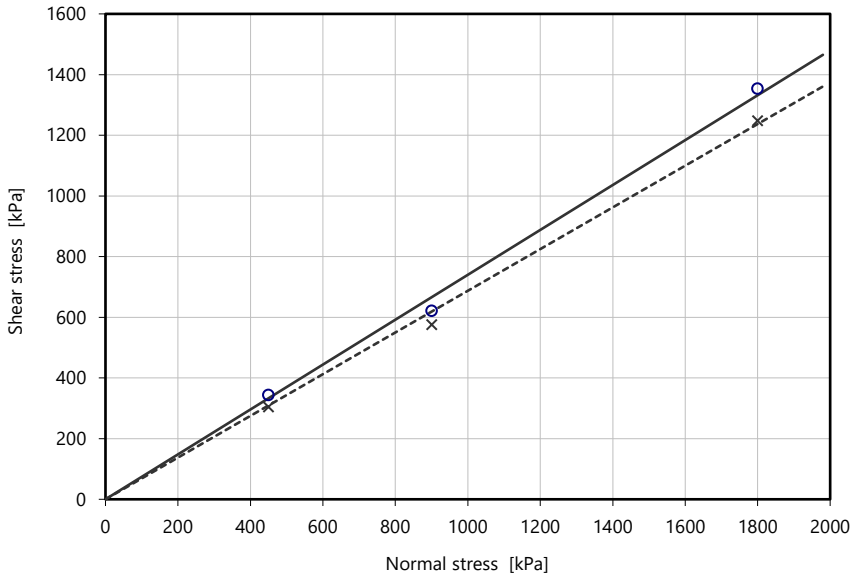
Determination of Shear Strength by Direct Shear (Small Shearbox Apparatus)

BS 1377-7:1990 Clause 4



1483

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.50
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	54



Shear Strength Parameters	Best Fit	Manual
c' [kPa]	[-22.9]	0
Ø' [degrees]	[37.0]	36.5
c _r ' [kPa]	[-32.3]	0
Ø _r ' [degrees]	[35.0]	34.5

Test number	1	2	3		
Particle Density [# indicates assumed value]	#2.7	#2.7	#2.7		
Height [mm]	22.6	22.5	22.4		
Bulk Density [Mg/m ³]	2.07	2.07	2.07		
Initial Moisture Content [%]	14.4	14.4	14.4		
Dry Density [Mg/m ³]	1.81	1.81	1.81		
Initial Voids Ratio	0.492	0.492	0.492		
Degree of Saturation [%]	78.9	78.9	79.0		
Consolidation					
Normal Stress [kPa]	450	900	1800		
Change in Height [mm]	-2.050	-2.603	-3.134		
Post consolidation					
Voids Ratio	0.474	0.469	0.464		
Moisture content [%]	17.1	17.0	14.9		
Shearing stage(s)					
Number of Traverses (including peak run)	3	3	3		
Peak Values					
Rate of Displacement [mm/min]	0.079	0.079	0.079		
Relative Horizontal Displacement [mm]	4.07	4.83	13.23		
Shear Stress [kPa]	343.5	620.5	1353.2		
Vertical Movement [mm]	-1.78	-2.30	-0.98		
Residual values					
Rate of Displacement [mm/min]	0.079	0.079	0.079		
Relative Horizontal Displacement [mm]	21.21	19.88	21.15		
Shear Stress [kPa]	303.8	575.6	1247.7		
Vertical Movement [mm]	1.32	1.03	0.79		

Issue Date	16/01/2023	Certificate Reference		Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:37
Remarks	Remoulded by tamping				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

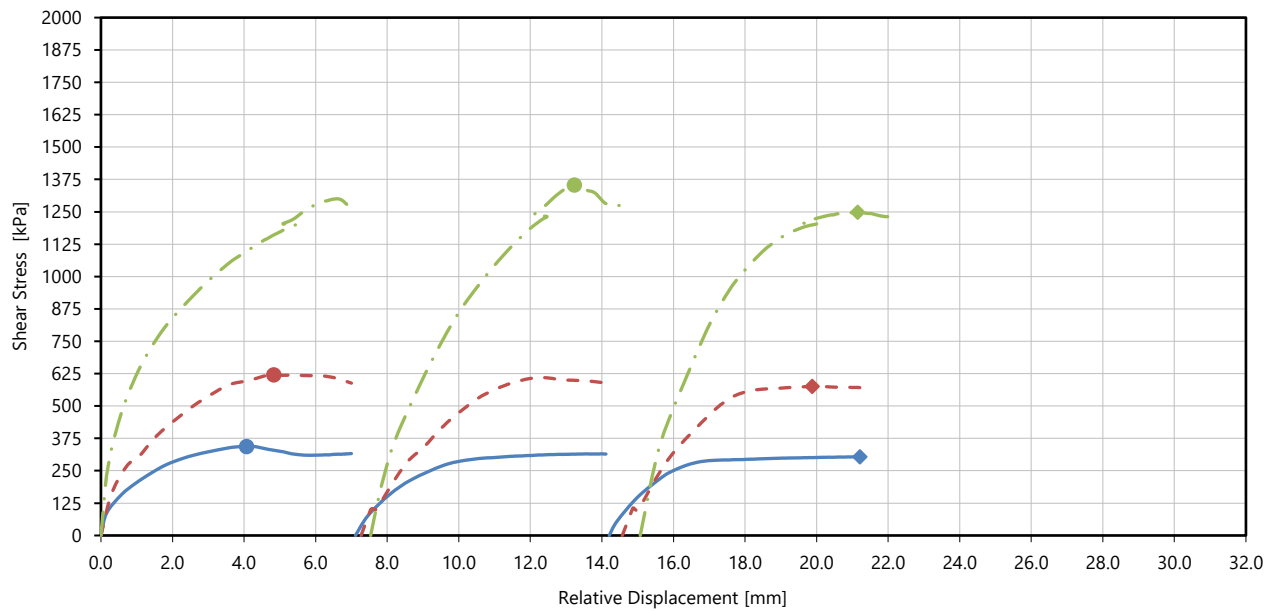
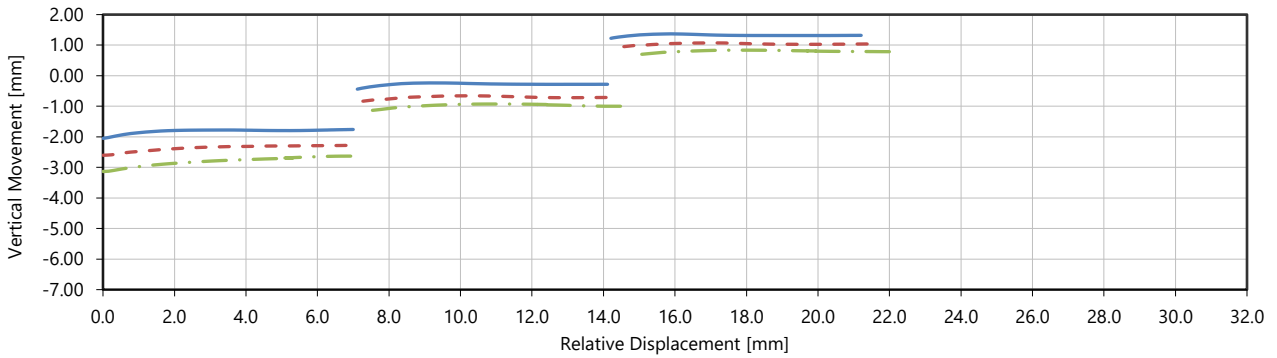
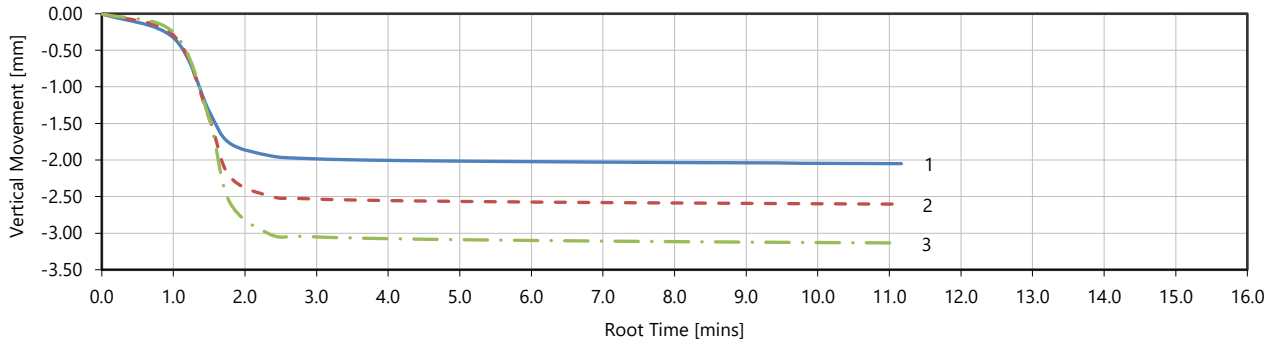
Determination of Shear Strength by Direct Shear (Small Shearbox Apparatus)

BS 1377-7:1990 Clause 4



1483

Project Reference	F212561	Location ID	BH103
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.50
Specimen Description	Brown silty SAND	Sample Type	B
Specimen Reference		Specimen Depth [m]	
		Sample Reference	54



Issue Date	16/01/2023	Certificate Reference		Authorised By	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023 08:37
Remarks	Remoulded by tamping				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Certificate of Analysis

Certificate Number 22-21090

Issued: 24-Oct-22

Client Fugro GeoServices Limited
Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Our Reference 22-21090

Client Reference F212561

Order No 386/122836/SB

Contract Title Keadby 3 Low Carbon Gas

Description 3 Soil samples.

Date Received 19-Oct-22

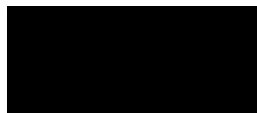
Date Started 19-Oct-22

Date Completed 24-Oct-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139



Summary of Chemical Analysis

Soil Samples

Our Ref 22-21090
 Client Ref F212561
 Contract Title Keadby 3 Low Carbon Gas

Lab No	2073853	2073854	2073855
Sample ID	MS-BH01	MS-BH20	MS-BH20
Depth	3.00	3.00	3.80
Other ID	17	16	18
Sample Type	B	D	D
Sampling Date	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Inorganics						
Loss on Ignition at 440oC	DETSC 2003#	0.01	%			0.67
Organic matter	DETSC 2002#	0.1	%	< 0.1	< 0.1	

Information in Support of the Analytical Results

Our Ref 22-21090
 Client Ref F212561
 Contract Keadby 3 Low Carbon Gas

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2073853	MS-BH01 3.00 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (28 days)	
2073854	MS-BH20 3.00 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (28 days)	
2073855	MS-BH20 3.80 SOIL		PT 500ml	Sample date not supplied, Loss on Ignition (730 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



DETS

Certificate of Analysis

Certificate Number 22-23662

Issued: 25-Nov-22

Client Fugro GeoServices Limited
Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Our Reference 22-23662

Client Reference F212561

Order No 386/122836/SB

Contract Title Keadby 3 low carbon gas

Description 42 Soil samples.

Date Received 18-Nov-22

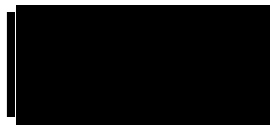
Date Started 18-Nov-22

Date Completed 25-Nov-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis

Soil Samples

Our Ref 22-23662
 Client Ref F212561
 Contract Title Keadby 3 low carbon gas

Lab No	2087016
Sample ID	AR-BH02
Depth	1.80
Other ID	14
Sample Type	D
Sampling Date	12/10/2022
Sampling Time	1630

Test	Method	LOD	Units	
Inorganics				
pH	DETSC 2008#		pH	7.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	83

Summary of Asbestos Analysis

Soil Samples

Our Ref 22-23662

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
2087010	AR-BH01 8 1.20	ADS4220921009 F212561_Chem02	SOIL	NAD	none	Josh Best
2087011	AR-BH02 6 0.30	F-6E00WB-S3X0 F212561_Chem02	SOIL	NAD	none	Josh Best
2087012	AR-BH02 9 0.70	F-JG00WB-KXTM F212561_Chem02	SOIL	NAD	none	Josh Best
2087013	AR-BH02 7 0.70	F-4G00WB-RANS F212561_Chem02	SOIL	NAD	none	Josh Best
2087014	AR-BH02 12 1.00	F-CHO0WB-0G5C F212561_Chem02	SOIL	NAD	none	Josh Best
2087015	AR-BH02 13 1.20	F-AIO0WB-U1DV F212561_Chem02	SOIL	NAD	none	Josh Best
2087016	AR-BH02 14 1.80	F-TIO0WB-W01V F212561_Chem02	SOIL	NAD	none	Josh Best
2087017	BH103 5 0.40	F-8XYCVB-52CU F212561_Chem02	SOIL	NAD	none	Josh Best
2087018	BH103 12 2.00	F-7ZYCVB-G8EF F212561_Chem02	SOIL	NAD	none	Josh Best
2087019	BH103 20 5.00	F-B4ZCVB-EPMQ F212561_Chem02	SOIL	NAD	none	Josh Best
2087020	BH103 28 9.00	F-WMCLVB-ZBVG F212561_Chem02	SOIL	NAD	none	Josh Best
2087021	BH103 27 9.00	F-7MCLVB-YREQ F212561_Chem02	SOIL	NAD	none	Josh Best
2087022	BH103 32 10.50	F-D0ILVB-MEOQ F212561_Chem02	SOIL	NAD	none	Josh Best
2087023	BH103 42 15.00	F-K6ILVB-E41W F212561_Chem02	SOIL	NAD	none	Josh Best
2087024	BH103 44 16.50	F-O7ILVB-3D06 F212561_Chem02	SOIL	NAD	none	Josh Best
2087025	BH104 8 1.20	F-M6D0WB-Q27D F212561_Chem02	SOIL	NAD	none	Josh Best
2087026	BH104 11 2.00	F-Y7D0WB-6CYG F212561_Chem02	SOIL	NAD	none	Josh Best
2087027	BH104 18 5.00	F-XXXXXX-XXXX F212561_Chem02	SOIL	NAD	none	Josh Best
2087028	BH104 19 5.70	F-JHD0WB-BU60 F212561_Chem02	SOIL	NAD	none	Josh Best
2087029	BH104 25 8.00	F-XXXXXX-XXX1 F212561_Chem02	SOIL	NAD	none	Josh Best
2087030	BH104 27 9.00	F-GLD0WB-WEO5 F212561_Chem02	SOIL	NAD	none	Josh Best
2087031	BH104 31 12.00	F-XXXXXX-XXX2 F212561_Chem02	SOIL	NAD	none	Josh Best
2087032	BH105 3 0.40	F-59NWVB-QIDA F212561_Chem02	SOIL	NAD	none	Josh Best
2087033	BH105 10 2.00	F-9DNWVB-PJZR F212561_Chem02	SOIL	NAD	none	Josh Best
2087034	BH105 11 2.70	F-RLNWVB-KBW9 F212561_Chem02	SOIL	NAD	none	Josh Best
2087035	BH105 17 5.00	F-LONWVB-OMRR F212561_Chem02	SOIL	NAD	none	Josh Best
2087036	DS101 3 0.10	ADS1220930003 F212561_Chem02	SOIL	NAD	none	Josh Best

Summary of Asbestos Analysis

Soil Samples

Our Ref 22-23662

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
2087037	DS101 6 0.40	ADS1220930006 F212561_Chem02	SOIL	NAD	none	Josh Best
2087038	DS106 3 0.10	ADS1220928003 F212561_Chem02	SOIL	NAD	none	Josh Best
2087039	DS106 6 0.40	ADS1220928006 F212561_Chem02	SOIL	Amosite	Amosite present as fibre bundles	Josh Best
2087040	DS107 2 0.10	ADS1220926002 F212561_Chem02	SOIL	NAD	none	Josh Best
2087041	DS107 8 0.40	ADS1220927006 F212561_Chem02	SOIL	NAD	none	Josh Best
2087042	DS107 7 0.40	ADS1220927005 F212561_Chem02	SOIL	NAD	none	Josh Best
2087043	DS108 5 0.40	ADS1220929013 F212561_Chem02	SOIL	NAD	none	Josh Best
2087044	DS108 3 0.40	ADS1220929011 F212561_Chem02	SOIL	NAD	none	Josh Best
2087045	DS109 15 4.50	F-PUIYVB-ZMR7 F212561_Chem02	SOIL	NAD	none	Josh Best
2087046	MS-BH11 7 0.70	ADS4220915013 F212561_Chem02	SOIL	NAD	none	Josh Best
2087047	MS-BH12 6 0.50	F-0QUKUB-BM8P F212561_Chem02	SOIL	NAD	none	Josh Best
2087048	MS-BH12 9 1.00	F-3RUKUB-BWGW F212561_Chem02	SOIL	NAD	none	Josh Best
2087049	MS-BH24 6 0.90	ADS4221004014 F212561_Chem02	SOIL	NAD	none	Josh Best
2087050	MS-BH25 6 0.20	ADS4220926006 F212561_Chem02	SOIL	NAD	none	Josh Best
2087051	MS-BH25 8 0.60	ADS4220926008 F212561_Chem02	SOIL	Amosite Chrysotile	Amosite present as loose fibrous asbestos debris and Chrysotile present as fibre bundles	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-23662
 Client Ref F212561
 Contract Keadby 3 low carbon gas

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2087010	AR-BH01 1.20 SOIL	21/09/22	PG		
2087011	AR-BH02 0.30 SOIL	12/10/22	PG		
2087012	AR-BH02 0.70 SOIL	12/10/22	PG		
2087013	AR-BH02 0.70 SOIL	12/10/22	PT 500ml		
2087014	AR-BH02 1.00 SOIL	12/10/22	PG		
2087015	AR-BH02 1.20 SOIL	12/10/22	PG		
2087016	AR-BH02 1.80 SOIL	12/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087017	BH103 0.40 SOIL	29/09/22	PG		
2087018	BH103 2.00 SOIL	29/09/22	PG		
2087019	BH103 5.00 SOIL	29/09/22	PG		
2087020	BH103 9.00 SOIL	04/10/22	PG		
2087021	BH103 9.00 SOIL	04/10/22	PT 500ml		
2087022	BH103 10.50 SOIL	04/10/22	PG		
2087023	BH103 15.00 SOIL	04/10/22	PG		
2087024	BH103 16.50 SOIL	04/10/22	PT 500ml		
2087025	BH104 1.20 SOIL	05/10/22	PG		
2087026	BH104 2.00 SOIL	05/10/22	PT 500ml		
2087027	BH104 5.00 SOIL	05/10/22	PG		
2087028	BH104 5.70 SOIL	05/10/22	PT 500ml		
2087029	BH104 8.00 SOIL	05/10/22	PG		
2087030	BH104 9.00 SOIL	05/10/22	PT 500ml		
2087031	BH104 12.00 SOIL	05/10/22	PG		
2087032	BH105 0.40 SOIL	10/10/22	PT 500ml		
2087033	BH105 2.00 SOIL	10/10/22	PG		
2087034	BH105 2.70 SOIL	10/10/22	PT 500ml		
2087035	BH105 5.00 SOIL	10/10/22	PT 500ml		
2087036	DS101 0.10 SOIL	30/09/22	PG		
2087037	DS101 0.40 SOIL	30/09/22	PG		
2087038	DS106 0.10 SOIL	28/09/22	PG		
2087039	DS106 0.40 SOIL	28/09/22	PG		
2087040	DS107 0.10 SOIL	26/09/22	PT 500ml		
2087041	DS107 0.40 SOIL	27/09/22	PG		
2087042	DS107 0.40 SOIL	27/09/22	PT 500ml		
2087043	DS108 0.40 SOIL	29/09/22	PG		
2087044	DS108 0.40 SOIL	29/09/22	PT 500ml		
2087045	DS109 4.50 SOIL	11/10/22	PT 500ml		
2087046	MS-BH11 0.70 SOIL	15/09/22	PG		
2087047	MS-BH12 0.50 SOIL	14/09/22	PG		
2087048	MS-BH12 1.00 SOIL	14/09/22	PG		
2087049	MS-BH24 0.90 SOIL	04/10/22	PG		
2087050	MS-BH25 0.20 SOIL	26/09/22	PG		
2087051	MS-BH25 0.60 SOIL	26/09/22	PG		

Information in Support of the Analytical Results

Our Ref 22-23662

Client Ref F212561

Contract Keadby 3 low carbon gas

Key: P-Plastic G-Bag T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



DETS

Certificate of Analysis

Certificate Number 22-23664

Issued: 29-Nov-22

Client Fugro GeoServices Limited
Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Our Reference 22-23664

Client Reference F212561

Order No 386/122836/SB

Contract Title Keadby 3 low carbon gas

Description 58 Soil samples, 3 Core samples.

Date Received 18-Nov-22

Date Started 18-Nov-22

Date Completed 29-Nov-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087056	2087057	2087058	2087059	2087060	2087061	2087062	2087063	2087064	2087065	2087066
Sample ID	AR-BH01	AR-BH01	AR-BH01	AR-BH02	AR-BH02	AR-BH02	BH103	BH103	BH103	BH103	BH103
Depth	2.50	4.00	10.50	4.80	7.30	10.60	4.00	15.00	22.50	28.50	30.00
Other ID	12	15	25	24	30	38	17	41	53	61	63
Sample Type	D	D	D	B	D	D	D	D	D	D	D
Sampling Date	21/09/2022	21/09/2022	22/09/2022	12/10/2022	12/10/2022	13/10/2022	29/09/2022	04/10/2022	04/10/2022	04/10/2022	04/10/2022
Sampling Time	1550	1624	1119	1633	1634	1135	2114	1149	1153	1254	1259

Test	Method	LOD	Units											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%											
pH	DETSC 2008#		pH	8.7	8.4	7.9	8.0	8.0	8.2	7.9	8.4	8.1	8.3	8.1
Organic matter	DETSC 2002#	0.1	%		1.0						0.8			
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	37	46	2000	96	1900	2100	1500	1400	230	190	160
Sulphur as S, Total	DETSC 2320	0.01	%											
Sulphate as SO4, Total	DETSC 2321#	0.01	%											

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087067	2087068	2087069	2087070	2087071	2087072	2087073	2087074	2087075	2087076	2087077
Sample ID	BH104	BH104	BH104	BH105	BH105	DS101	MS-BH09	MS-BH10	MS-BH11	MS-BH11	MS-BH11
Depth	1.20	10.00	13.00	2.00	4.00	0.40	14.50	3.50	2.00	3.00	5.00
Other ID	7	28	32	9	15	4	43	17	12	14	19
Sample Type	D	D	D	D	D	D	D	D	D	D	D
Sampling Date	05/10/2022	05/10/2022	05/10/2022	10/10/2022	10/10/2022	30/09/2022	n/s	14/09/2022	16/09/2022	16/09/2022	20/09/2022
Sampling Time	0000	0000	0000	1214	1221	2126	n/s	1400	0904	0906	1010

Test	Method	LOD	Units									
Inorganics												
Loss on Ignition at 440oC	DETSC 2003#	0.01	%								1.7	
pH	DETSC 2008#		pH	8.8	9.9	9.1	8.8	9.1	8.7	8.3		8.2
Organic matter	DETSC 2002#	0.1	%			0.8					0.5	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	33	180	130	40	32	22	2200		28
Sulphur as S, Total	DETSC 2320	0.01	%							0.22		
Sulphate as SO4, Total	DETSC 2321#	0.01	%							0.53		

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087078	2087079	2087080	2087081	2087082	2087083	2087084	2087085	2087086	2087087	2087088
Sample ID	MS-BH11	MS-BH11	MS-BH11	MS-BH11	MS-BH12	MS-BH12	MS-BH12	MS-BH17	MS-BH17	MS-BH17	MS-BH17
Depth	7.50	10.50	17.43	25.08	3.80	13.30	40.77	2.20	3.20	3.80	5.80
Other ID	23	27	5	16	17	36	21	12	16	17	25
Sample Type	D	D	C	C	D	D	C	D	D	D	D
Sampling Date	20/09/2022	20/09/2022	11/10/2022	11/10/2022	26/09/2022	28/09/2022	19/10/2022	15/09/2022	15/09/2022	15/09/2022	16/09/2022
Sampling Time	1048	1206	1109	1254	1622	0839	1334	1743	1746	1746	1201

Test	Method	LOD	Units										
Inorganics													
Loss on Ignition at 440oC	DETSC 2003#	0.01	%										2.4
pH	DETSC 2008#		pH		8.6	8.4	8.6	7.4	8.0	8.4	8.2	7.9	
Organic matter	DETSC 2002#	0.1	%	0.5	0.3			0.4	0.3				0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		70	1600	1800	420	1100	2200	490	770	
Sulphur as S, Total	DETSC 2320	0.01	%								0.03	0.14	
Sulphate as SO4, Total	DETSC 2321#	0.01	%								0.32	0.35	

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087089	2087090	2087091	2087092	2087093	2087094	2087095	2087096	2087097	2087098	2087099
Sample ID	MS-BH17	MS-BH17	MS-BH18	MS-BH18	MS-BH18	MS-BH18	MS-BH18	MS-BH21	MS-BH22	MS-BH22	MS-BH22
Depth	7.80	14.40	3.20	4.80	7.30	11.30	13.00	1.20	0.10	1.50	7.50
Other ID	31	44	15	19	26	34	39	10	1	10	22
Sample Type	B	D	D	D	D	D	D	D	D	D	D
Sampling Date	16/09/2022	20/09/2022	06/10/2022	07/10/2022	07/10/2022	10/10/2022	10/10/2022	n/s	28/09/2022	28/09/2022	29/09/2022
Sampling Time	1203	1414	1652	1144	1149	1453	1454	n/s	1334	1630	1008

Test	Method	LOD	Units											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%											
pH	DETSC 2008#		pH	8.6	8.0	7.6	8.0	8.3	8.2	8.4		7.6	8.1	8.2
Organic matter	DETSC 2002#	0.1	%							0.5				
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	30	2100	740	1400	210	360	87		30	42	41
Sulphur as S, Total	DETSC 2320	0.01	%	0.07	3.3									
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.09	9.1									

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087100	2087101	2087102	2087103	2087104	2087105	2087106	2087107	2087108	2087109	2087110
Sample ID	MS-BH22	MS-BH22	MS-BH23	MS-BH23	MS-BH23	MS-BH23	MS-BH24	MS-BH24	MS-BH24	MS-BH24	MS-BH25
Depth	8.20	14.50	0.10	4.00	7.50	14.00	2.00	4.00	12.00	14.70	0.10
Other ID	23	36	1	18	24	33	11	16	28	34	1
Sample Type	D	D	D	D	D	D	D	D	D	D	D
Sampling Date	29/09/2022	29/09/2022	30/09/2022	03/10/2022	03/10/2022	04/10/2022	05/10/2022	05/10/2022	05/10/2022	05/10/2022	26/09/2022
Sampling Time	1034	1424	1047	1326	1533	1223	0925	1022	1556	1653	1307

Test	Method	LOD	Units											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%											
pH	DETSC 2008#		pH		7.9	7.7	7.8	8.1	8.0	8.0	8.1	8.9	8.1	11.2
Organic matter	DETSC 2002#	0.1	%	0.7	0.1			0.4						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		1600	53	570	52	370	79	44	76	2500	240
Sulphur as S, Total	DETSC 2320	0.01	%											
Sulphate as SO4, Total	DETSC 2321#	0.01	%											

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-23664

Client Ref F212561

Contract Title Keadby 3 low carbon gas

Lab No	2087111	2087112	2087113	2087114	2087115	2087116
Sample ID	MS-BH25	MS-BH25	MS-BH25	MS-BH25	MS-BH25	MS-BH25
Depth	0.60	1.20	2.00	6.70	13.50	15.00
Other ID	7	11	14	28	37	41
Sample Type	D	D	D	D	D	D
Sampling Date	26/09/2022	26/09/2022	27/09/2022	27/09/2022	27/09/2022	27/09/2022
Sampling Time	1333	1500	0923	1330	1640	1645

Test	Method	LOD	Units						
Inorganics									
Loss on Ignition at 440oC	DETSC 2003#	0.01	%						
pH	DETSC 2008#		pH	11.5	11.3	10.5	10.8	9.7	8.9
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	450	540	540	370	200	1700
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						

Information in Support of the Analytical Results

Our Ref 22-23664
 Client Ref F212561
 Contract Keadby 3 low carbon gas

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2087056	AR-BH01 2.50 SOIL	21/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087057	AR-BH01 4.00 SOIL	21/09/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087058	AR-BH01 10.50 SOIL	22/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087059	AR-BH02 4.80 SOIL	12/10/22	PG	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087060	AR-BH02 7.30 SOIL	12/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087061	AR-BH02 10.60 SOIL	13/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087062	BH103 4.00 SOIL	29/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087063	BH103 15.00 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087064	BH103 22.50 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087065	BH103 28.50 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087066	BH103 30.00 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087067	BH104 1.20 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087068	BH104 10.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087069	BH104 13.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087070	BH105 2.00 SOIL	10/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087071	BH105 4.00 SOIL	10/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087072	DS101 0.40 SOIL	30/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087073	MS-BH09 14.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2087074	MS-BH10 3.50 SOIL	14/09/22	PT 500ml		
2087075	MS-BH11 2.00 SOIL	16/09/22	PT 500ml	Organic Matter (Manual) (28 days)	
2087076	MS-BH11 3.00 SOIL	16/09/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087077	MS-BH11 5.00 SOIL	20/09/22	PT 500ml	Organic Matter (Manual) (28 days)	
2087078	MS-BH11 7.50 SOIL	20/09/22	PT 500ml	Organic Matter (Manual) (28 days)	

Information in Support of the Analytical Results

Our Ref 22-23664
 Client Ref F212561
 Contract Keadby 3 low carbon gas

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2087079	MS-BH11 10.50 SOIL	20/09/22		PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087080	MS-BH11 17.43 CORE	11/10/22		P(other)	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087081	MS-BH11 25.08 CORE	11/10/22		P(other)	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087082	MS-BH12 3.80 SOIL	26/09/22		PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087083	MS-BH12 13.30 SOIL	28/09/22		PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087084	MS-BH12 40.77 CORE	19/10/22		P(other)	pH + Conductivity (7 days)	
2087085	MS-BH17 2.20 SOIL	15/09/22		PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2087086	MS-BH17 3.20 SOIL	15/09/22		PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2087087	MS-BH17 3.80 SOIL	15/09/22		PT 500ml	Organic Matter (Manual) (28 days)	
2087088	MS-BH17 5.80 SOIL	16/09/22		PG		
2087089	MS-BH17 7.80 SOIL	16/09/22		PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2087090	MS-BH17 14.40 SOIL	20/09/22		PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2087091	MS-BH18 3.20 SOIL	06/10/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087092	MS-BH18 4.80 SOIL	07/10/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087093	MS-BH18 7.30 SOIL	07/10/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087094	MS-BH18 11.30 SOIL	10/10/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087095	MS-BH18 13.00 SOIL	10/10/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087096	MS-BH21 1.20 SOIL			PT 500ml	Sample date not supplied, Organic Matter (Manual) (28 days)	
2087097	MS-BH22 0.10 SOIL	28/09/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087098	MS-BH22 1.50 SOIL	28/09/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087099	MS-BH22 7.50 SOIL	29/09/22		PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087100	MS-BH22 8.20 SOIL	29/09/22		PT 500ml	Organic Matter (Manual) (28 days)	
2087101	MS-BH22 14.50 SOIL	29/09/22		PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 22-23664
 Client Ref F212561
 Contract Keadby 3 low carbon gas

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2087102	MS-BH23 0.10 SOIL	30/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087103	MS-BH23 4.00 SOIL	03/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087104	MS-BH23 7.50 SOIL	03/10/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2087105	MS-BH23 14.00 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087106	MS-BH24 2.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087107	MS-BH24 4.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087108	MS-BH24 12.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087109	MS-BH24 14.70 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087110	MS-BH25 0.10 SOIL	26/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087111	MS-BH25 0.60 SOIL	26/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087112	MS-BH25 1.20 SOIL	26/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087113	MS-BH25 2.00 SOIL	27/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087114	MS-BH25 6.70 SOIL	27/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087115	MS-BH25 13.50 SOIL	27/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2087116	MS-BH25 15.00 SOIL	27/09/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub G-Bag

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

Our Ref 22-23664
Client Ref F212561
Contract Keadby 3 low carbon gas

End of Report



DETS

Certificate of Analysis

Certificate Number 22-25313

Issued: 19-Dec-22

Client Fugro GeoServices Limited
Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Our Reference 22-25313

Client Reference F212561

Order No 386/123913/SB

Contract Title Keadby 3 Low Carbon Gas

Description 34 Soil samples, 1 Core sample.

Date Received 07-Dec-22

Date Started 07-Dec-22

Date Completed 19-Dec-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



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Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-25313

Client Ref F212561

Contract Title Keadby 3 Low Carbon Gas

Lab No	2095441	2095443	2095445	2095449	2095454	2095455	2095456	2095457	2095458	2095459	2095460
Sample ID	BH101	BH101	BH102	HR-BH01	HR-BH01	HR-BH01	HR-BH01	MS-BH13	MS-BH13	MS-BH13	MS-BH13
Depth	0.70	5.00	1.20	0.70	3.20	7.30	14.00	0.10	1.80	6.20	11.30
Other ID	6	19	8	4	15	24	39	2	10	24	35
Sample Type	D	D	D	D	D	D	D	D	D	D	D
Sampling Date	n/s	n/s	n/s	27/10/2022	27/10/2022	27/10/2022	28/10/2022	04/10/2022	04/10/2022	04/10/2022	05/10/2022
Sampling Time	n/s	n/s	n/s	1343	1345	1713	1116	1629	1631	1636	1332

Test	Method	LOD	Units											
Inorganics														
pH	DETSC 2008#		pH	8.0	8.3	8.1	8.1	7.5	8.0	8.6	9.5	8.6	8.4	8.4
Organic matter	DETSC 2002#	0.1	%				1.9	2.0						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	35	130	22	75	1300	510	160	91	88	26	36

Summary of Chemical Analysis Soil/Core Samples

Our Ref 22-25313

Client Ref F212561

Contract Title Keadby 3 Low Carbon Gas

Lab No	2095461	2095462	2095463	2095464	2095465	2095466	2095469	2095470	2095471	2095472	2095473
.Sample ID	MS-BH13	MS-BH13	MS-BH26	MS-BH26	MS-BH26	MS-BH26	MS-BH27	MS-BH27	MS-BH27	MS-BH27	MS-BH27
Depth	14.00	22.13	0.40	1.30	2.80	5.00	0.70	1.70	3.10	5.00	6.50
Other ID	42	8	3	7	10	18	5	8	12	19	25
Sample Type	D	C	D	D	D	D	D	D	D	D	D
Sampling Date	05/10/2022	02/11/2022	07/11/2022	07/11/2022	07/11/2022	07/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Sampling Time	1334	1400	1554	1555	1556	1559	1523	1523	1524	1526	1529

Test	Method	LOD	Units											
Inorganics														
pH	DETSC 2008#		pH	8.2	8.7	7.7	7.7	6.6	8.0	8.1	8.2	7.1	8.2	8.1
Organic matter	DETSC 2002#	0.1	%											
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	1600	440	1300	52	96	23	29	34	28	21

Summary of Asbestos Analysis Soil Samples

Our Ref 22-25313

Client Ref F212561

Contract Title Keadby 3 Low Carbon Gas

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
2095439	AR-BH02 15 1.80	F-DJO0WB-1TON F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095440	BH101 5 0.50	F-DJO0WB-1TON F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095442	BH101 16 3.50	F-DJO0WB-1TON F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095444	BH102 5 0.50	F-NGJ8VB-YXNY F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095446	BH106 7 1.20	F-RA0HWB-9DKQ F212561_Chem04	SOIL	Chrysotile	Bundles of chrysotile fibres	Darryl Fletcher
2095447	DS109 13 1.50	F-FFIYVB-3AUA F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095448	HR-BH01 6 0.70	F-PS8SWB-NZ60 F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095449	HR-BH01 4 0.70	F-0S8SWB-1PQL F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095450	HR-BH01 8 1.20	F-BT8SWB-O102 F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095451	HR-BH01 9 1.20	F-4U8SWB-0DTW F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095452	HR-BH01 14 2.80	F-UV8SWB-BZM8 F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095453	HR-BH01 13 2.80	F-EV8SWB-J3UW F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095467	MS-BH27 3 0.50	F-22C5XB-IH8N F212561_Chem04	SOIL	NAD	none	Darryl Fletcher
2095468	MS-BH27 6 0.70	F-22C5XB-CYKY F212561_Chem04	SOIL	NAD	none	Darryl Fletcher

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 22-25313
 Client Ref F212561
 Contract Keadby 3 Low Carbon Gas

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2095439	AR-BH02 1.80 SOIL	12/10/22	PG		
2095440	BH101 0.50 SOIL		PG		
2095441	BH101 0.70 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095442	BH101 3.50 SOIL		PG		
2095443	BH101 5.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095444	BH102 0.50 SOIL		PG		
2095445	BH102 1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095446	BH106 1.20 SOIL	21/10/22	PG		
2095447	DS109 1.50 SOIL	11/10/22	PT 500ml		
2095448	HR-BH01 0.70 SOIL	27/10/22	PG		
2095449	HR-BH01 0.70 SOIL	27/10/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2095450	HR-BH01 1.20 SOIL	27/10/22	PG		
2095451	HR-BH01 1.20 SOIL	27/10/22	PT 500ml		
2095452	HR-BH01 2.80 SOIL	27/10/22	PG		
2095453	HR-BH01 2.80 SOIL	27/10/22	PT 500ml		
2095454	HR-BH01 3.20 SOIL	27/10/22	PT 500ml	Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2095455	HR-BH01 7.30 SOIL	27/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095456	HR-BH01 14.00 SOIL	28/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095457	MS-BH13 0.10 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095458	MS-BH13 1.80 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095459	MS-BH13 6.20 SOIL	04/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095460	MS-BH13 11.30 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095461	MS-BH13 14.00 SOIL	05/10/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095462	MS-BH13 22.13 CORE	02/11/22	PG	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095463	MS-BH26 0.40 SOIL	07/11/22	PT 500ml	pH + Conductivity (7 days)	
2095464	MS-BH26 1.30 SOIL	07/11/22	PT 500ml	pH + Conductivity (7 days)	
2095465	MS-BH26 2.80 SOIL	07/11/22	PT 500ml	pH + Conductivity (7 days)	
2095466	MS-BH26 5.00 SOIL	07/11/22	PT 500ml	pH + Conductivity (7 days)	
2095467	MS-BH27 0.50 SOIL	03/11/22	PT 500ml		
2095468	MS-BH27 0.70 SOIL	03/11/22	PG		
2095469	MS-BH27 0.70 SOIL	03/11/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095470	MS-BH27 1.70 SOIL	03/11/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	

Information in Support of the Analytical Results

Our Ref 22-25313
 Client Ref F212561
 Contract Keadby 3 Low Carbon Gas

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2095471	MS-BH27 3.10 SOIL	03/11/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095472	MS-BH27 5.00 SOIL	03/11/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2095473	MS-BH27 6.50 SOIL	03/11/22	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic G-Bag T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report



DETS

Certificate of Analysis

Certificate Number 23-00915

Issued: 18-Jan-23

Client Fugro GeoServices Limited
Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Our Reference 23-00915

Client Reference F212561

Order No 386/122836/SB

Contract Title Keadby 3 Low Carbon Gas

Description One Soil sample.

Date Received 16-Jan-23

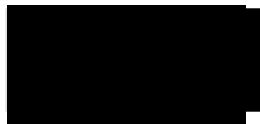
Date Started 16-Jan-23

Date Completed 18-Jan-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Kirk Bridgewood
General Manager



2139



Summary of Asbestos Analysis

Soil Samples

Our Ref 23-00915

Client Ref F212561

Contract Title Keadby 3 Low Carbon Gas

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
2108820	AR-BH01 11 2.00	ADS4220921012 F212561_Chem05	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 23-00915
 Client Ref F212561
 Contract Keadby 3 Low Carbon Gas

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2108820	AR-BH01 2.00 SOIL	21/09/22	PT 500ml		
<p>Key: P-Plastic T-Tub</p> <p>DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.</p>					

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.85
Specimen Description	Grey MUDSTONE with gypsum veins, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	18.85
		Sample Reference	5

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.415°	Fail
		End 1, Diameter 2	0.338°	Fail
		End 2, Diameter 1	0.011°	Pass
		End 2, Diameter 2	0.288°	Fail
Parallelism	0.250°	Diameter 1	-0.463°	Fail
		Diameter 2	0.002°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.72
Length [mm]	215.33
Length / Diameter Ratio	2.12
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.57
Water Content [%]	3.9
Stress Rate [MPa/s]	0.0697
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	33.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.88
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.88
		Sample Reference	9

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.066°	Pass
		End 1, Diameter 2	0.026°	Pass
		End 2, Diameter 1	0.136°	Pass
		End 2, Diameter 2	0.151°	Pass
Parallelism	0.250°	Diameter 1	0.124°	Pass
		Diameter 2	0.138°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.69
Length [mm]	212.20
Length / Diameter Ratio	2.09
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.35
Water Content [%]	14.3
Stress Rate [MPa/s]	0.0557
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	5.6

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.30
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.30
		Sample Reference	10

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.017°	Pass
		End 1, Diameter 2	0.516°	Fail
		End 2, Diameter 1	0.222°	Pass
		End 2, Diameter 2	0.334°	Fail
Parallelism	0.250°	Diameter 1	0.026°	Pass
		Diameter 2	-0.189°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.58
Length [mm]	211.40
Length / Diameter Ratio	2.08
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.44
Water Content [%]	7.9
Stress Rate [MPa/s]	0.0587
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	5.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.40
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.40
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.134°	Pass
		End 1, Diameter 2	0.255°	Fail
		End 2, Diameter 1	0.147°	Pass
		End 2, Diameter 2	0.023°	Pass
Parallelism	0.250°	Diameter 1	0.056°	Pass
		Diameter 2	-0.258°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.32
Length [mm]	200.30
Length / Diameter Ratio	2.02
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.37
Water Content [%]	13.5
Stress Rate [MPa/s]	0.0391
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	10.5

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.20
Specimen Description	Grey MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.20
		Sample Reference	6

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.242°	Pass
		End 1, Diameter 2	0.158°	Pass
		End 2, Diameter 1	0.241°	Pass
		End 2, Diameter 2	0.178°	Pass
Parallelism	0.250°	Diameter 1	-0.003°	Pass
		Diameter 2	0.031°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.72
Length [mm]	212.76
Length / Diameter Ratio	2.09
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.50
Water Content [%]	8.3
Stress Rate [MPa/s]	0.0594
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	12.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.68
Specimen Description	Grey SILTSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	17.68
		Sample Reference	47

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.139°	Pass
		End 1, Diameter 2	0.178°	Pass
		End 2, Diameter 1	0.243°	Pass
		End 2, Diameter 2	0.047°	Pass
Parallelism	0.250°	Diameter 1	0.107°	Pass
		Diameter 2	-0.136°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	78.36
Length [mm]	153.20
Length / Diameter Ratio	1.96
Specimen Condition	as received
Test Results	
Date of Test	12/12/2022
Bulk Density [Mg/m ³]	2.42
Water Content [%]	11.2
Stress Rate [MPa/s]	0.0395
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	16.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19 Test specimen <2:1 length to diameter ratio tested at client's request				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.19
Specimen Description	Grey MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.19
		Sample Reference	49

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.11°	Pass
		End 1, Diameter 2	0.06°	Pass
		End 2, Diameter 1	0.111°	Pass
		End 2, Diameter 2	0.07°	Pass
Parallelism	0.250°	Diameter 1	-0.448°	Fail
		Diameter 2	0.013°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	78.24
Length [mm]	129.76
Length / Diameter Ratio	1.66
Specimen Condition	as received
Test Results	
Date of Test	12/12/2022
Bulk Density [Mg/m ³]	2.31
Water Content [%]	15.8
Stress Rate [MPa/s]	0.0397
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	6.6

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19 Test specimen <2:1 length to diameter ratio tested at client's request				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.71
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	25.71
		Sample Reference	53

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.043°	Pass
		End 1, Diameter 2	0.211°	Pass
		End 2, Diameter 1	0.163°	Pass
		End 2, Diameter 2	0.096°	Pass
Parallelism	0.250°	Diameter 1	0.115°	Pass
		Diameter 2	-0.122°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	75.41
Length [mm]	168.23
Length / Diameter Ratio	2.23
Specimen Condition	as received
Test Results	
Date of Test	12/12/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	17.3
Stress Rate [MPa/s]	0.0384
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	6.2

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	15/12/2022	
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.10
Specimen Description	Brown SILTSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	27.10
		Sample Reference	55

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.04°	Pass
		End 1, Diameter 2	0.103°	Pass
		End 2, Diameter 1	0.038°	Pass
		End 2, Diameter 2	0.045°	Pass
Parallelism	0.250°	Diameter 1	0.008°	Pass
		Diameter 2	-0.51°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	78.24
Length [mm]	167.48
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	12/12/2022
Bulk Density [Mg/m ³]	2.40
Water Content [%]	13.1
Stress Rate [MPa/s]	0.0382
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	7.6

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	30.00
Specimen Description	Brown MUDSTONE, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	30.00
		Sample Reference	58

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.061°	Pass
		End 1, Diameter 2	0.105°	Pass
		End 2, Diameter 1	0.067°	Pass
		End 2, Diameter 2	0.227°	Pass
Parallelism	0.250°	Diameter 1	-0.042°	Pass
		Diameter 2	0.162°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.59
Length [mm]	208.77
Length / Diameter Ratio	2.06
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	14.1
Stress Rate [MPa/s]	0.0370
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	4.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	31.82
Specimen Description	Brown MUDSTONE, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	31.82
		Sample Reference	60

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.085°	Pass
		End 1, Diameter 2	0.094°	Pass
		End 2, Diameter 1	0.123°	Pass
		End 2, Diameter 2	0.099°	Pass
Parallelism	0.250°	Diameter 1	0.063°	Pass
		Diameter 2	-0.136°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.53
Length [mm]	197.92
Length / Diameter Ratio	1.95
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.46
Water Content [%]	8.8
Stress Rate [MPa/s]	0.0384
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	3.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.34
Specimen Description	Grey MUDSTONE, strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.34
		Sample Reference	5

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.145°	Pass
		End 1, Diameter 2	0.009°	Pass
		End 2, Diameter 1	0.069°	Pass
		End 2, Diameter 2	0.053°	Pass
Parallelism	0.250°	Diameter 1	-0.096°	Pass
		Diameter 2	0.067°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.78
Length [mm]	212.52
Length / Diameter Ratio	2.09
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.60
Water Content [%]	3.3
Stress Rate [MPa/s]	0.0805
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	88.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.30
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.30
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.01°	Pass
		End 1, Diameter 2	0.073°	Pass
		End 2, Diameter 1	0.29°	Fail
		End 2, Diameter 2	0.293°	Fail
Parallelism	0.250°	Diameter 1	0.324°	Fail
		Diameter 2	0.259°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.57
Length [mm]	182.77
Length / Diameter Ratio	1.80
Specimen Condition	as received
Test Results	
Date of Test	17/10/2022
Bulk Density [Mg/m ³]	2.33
Water Content [%]	14.2
Stress Rate [MPa/s]	0.0589
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	10.1

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.60
Specimen Description	Grey MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	23.60
		Sample Reference	6

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.06°	Pass
		End 1, Diameter 2	0.232°	Pass
		End 2, Diameter 1	0.003°	Pass
		End 2, Diameter 2	0.101°	Pass
Parallelism	0.250°	Diameter 1	-0.07°	Pass
		Diameter 2	-0.183°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.57
Length [mm]	212.57
Length / Diameter Ratio	2.11
Specimen Condition	as received
Test Results	
Date of Test	18/10/2022
Bulk Density [Mg/m ³]	2.46
Water Content [%]	10.7
Stress Rate [MPa/s]	0.0595
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	16.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.66
Specimen Description	Grey MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.66
		Sample Reference	8

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.017°	Pass
		End 1, Diameter 2	0.003°	Pass
		End 2, Diameter 1	0.101°	Pass
		End 2, Diameter 2	0.143°	Pass
Parallelism	0.250°	Diameter 1	0.095°	Pass
		Diameter 2	0.173°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.69
Length [mm]	214.05
Length / Diameter Ratio	2.15
Specimen Condition	as received
Test Results	
Date of Test	18/10/2022
Bulk Density [Mg/m ³]	2.41
Water Content [%]	10.4
Stress Rate [MPa/s]	0.0590
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	16.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.60
Specimen Description	Grey MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.60
		Sample Reference	4

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.081°	Pass
		End 1, Diameter 2	0.265°	Fail
		End 2, Diameter 1	0.144°	Pass
		End 2, Diameter 2	0.334°	Fail
Parallelism	0.250°	Diameter 1	0.043°	Pass
		Diameter 2	0.033°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.11
Length [mm]	212.92
Length / Diameter Ratio	2.17
Specimen Condition	as received
Test Results	
Date of Test	18/10/2022
Bulk Density [Mg/m ³]	2.40
Water Content [%]	10.8
Stress Rate [MPa/s]	0.0579
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	5.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.09
Specimen Description	Grey MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.24
		Sample Reference	6

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.197°	Pass
		End 1, Diameter 2	0.22°	Pass
		End 2, Diameter 1	0.231°	Pass
		End 2, Diameter 2	0.463°	Fail
Parallelism	0.250°	Diameter 1	0.039°	Pass
		Diameter 2	0.248°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.38
Length [mm]	184.69
Length / Diameter Ratio	1.84
Specimen Condition	as received
Test Results	
Date of Test	18/10/2022
Bulk Density [Mg/m ³]	2.44
Water Content [%]	10.7
Stress Rate [MPa/s]	0.0585
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	10.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	31/10/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	31/10/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.33
Specimen Description	Grey MUDSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.33
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.192°	Pass
		End 1, Diameter 2	0.197°	Pass
		End 2, Diameter 1	0.132°	Pass
		End 2, Diameter 2	0.053°	Pass
Parallelism	0.250°	Diameter 1	-0.059°	Pass
		Diameter 2	-0.145°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.67
Length [mm]	209.85
Length / Diameter Ratio	2.11
Specimen Condition	as received
Test Results	
Date of Test	21/11/2022
Bulk Density [Mg/m ³]	2.58
Water Content [%]	3.1
Stress Rate [MPa/s]	0.0604
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	45.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.13
Specimen Description	Grey MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	23.13
		Sample Reference	8

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.189°	Pass
		End 1, Diameter 2	0.232°	Pass
		End 2, Diameter 1	0.075°	Pass
		End 2, Diameter 2	0.098°	Pass
Parallelism	0.250°	Diameter 1	-0.152°	Pass
		Diameter 2	-0.146°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.26
Length [mm]	210.28
Length / Diameter Ratio	2.10
Specimen Condition	as received
Test Results	
Date of Test	21/11/2022
Bulk Density [Mg/m ³]	2.37
Water Content [%]	12.5
Stress Rate [MPa/s]	0.0593
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	9.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.30
Specimen Description	Grey MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.30
		Sample Reference	4

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.019°	Pass
		End 1, Diameter 2	0.145°	Pass
		End 2, Diameter 1	0.211°	Pass
		End 2, Diameter 2	0.07°	Pass
Parallelism	0.250°	Diameter 1	-0.007°	Pass
		Diameter 2	-0.077°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.46
Length [mm]	210.04
Length / Diameter Ratio	2.09
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.43
Water Content [%]	11.5
Stress Rate [MPa/s]	0.0399
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	18.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.80
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.80
		Sample Reference	8

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.086°	Pass
		End 1, Diameter 2	0.057°	Pass
		End 2, Diameter 1	0.09°	Pass
		End 2, Diameter 2	0.071°	Pass
Parallelism	0.250°	Diameter 1	-0.002°	Pass
		Diameter 2	0.02°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.82
Length [mm]	213.87
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.39
Water Content [%]	15.3
Stress Rate [MPa/s]	0.0391
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	9.2

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.75
Specimen Description	Grey MUDSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.75
		Sample Reference	43

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.225°	Pass
		End 1, Diameter 2	0.085°	Pass
		End 2, Diameter 1	0.104°	Pass
		End 2, Diameter 2	0.272°	Fail
Parallelism	0.250°	Diameter 1	-0.118°	Pass
		Diameter 2	0.164°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	102.22
Length [mm]	199.69
Length / Diameter Ratio	1.95
Specimen Condition	as received
Test Results	
Date of Test	07/12/2022
Bulk Density [Mg/m ³]	2.54
Water Content [%]	5.3
Stress Rate [MPa/s]	0.0414
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	48.1

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.70
Specimen Description	Brown MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.70
		Sample Reference	45

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.267°	Fail
		End 1, Diameter 2	0.267°	Fail
		End 2, Diameter 1	0.122°	Pass
		End 2, Diameter 2	0.081°	Pass
Parallelism	0.250°	Diameter 1	0.05°	Pass
		Diameter 2	-0.176°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	79.01
Length [mm]	143.70
Length / Diameter Ratio	1.82
Specimen Condition	as received
Test Results	
Date of Test	09/12/2022
Bulk Density [Mg/m ³]	2.40
Water Content [%]	15.1
Stress Rate [MPa/s]	0.0399
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	15.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	13/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.73
Specimen Description	Brown MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.73
		Sample Reference	49

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.187°	Pass
		End 1, Diameter 2	0.075°	Pass
		End 2, Diameter 1	0.148°	Pass
		End 2, Diameter 2	0.033°	Pass
Parallelism	0.250°	Diameter 1	-0.032°	Pass
		Diameter 2	-0.094°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.76
Length [mm]	210.38
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.42
Water Content [%]	12.4
Stress Rate [MPa/s]	0.0587
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	14.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	26.82
Specimen Description	Brown MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	26.82
		Sample Reference	51

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.172°	Pass
		End 1, Diameter 2	0.023°	Pass
		End 2, Diameter 1	0.112°	Pass
		End 2, Diameter 2	0.131°	Pass
Parallelism	0.250°	Diameter 1	-0.038°	Pass
		Diameter 2	0.085°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	78.58
Length [mm]	171.93
Length / Diameter Ratio	2.19
Specimen Condition	as received
Test Results	
Date of Test	09/12/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	15.3
Stress Rate [MPa/s]	0.0398
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	12.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	13/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	28.70
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	28.70
		Sample Reference	53

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.071°	Pass
		End 1, Diameter 2	0.243°	Pass
		End 2, Diameter 1	0.056°	Pass
		End 2, Diameter 2	0.015°	Pass
Parallelism	0.250°	Diameter 1	-0.05°	Pass
		Diameter 2	-0.232°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.55
Length [mm]	208.78
Length / Diameter Ratio	2.06
Specimen Condition	as received
Test Results	
Date of Test	07/12/2022
Bulk Density [Mg/m ³]	2.39
Water Content [%]	14.0
Stress Rate [MPa/s]	0.0401
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	9.6

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	31.35
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	31.35
		Sample Reference	56

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.001°	Pass
		End 1, Diameter 2	0.124°	Pass
		End 2, Diameter 1	0.086°	Pass
		End 2, Diameter 2	0.067°	Pass
Parallelism	0.250°	Diameter 1	0.08°	Pass
		Diameter 2	-0.062°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	78.46
Length [mm]	168.16
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	09/12/2022
Bulk Density [Mg/m ³]	2.37
Water Content [%]	13.0
Stress Rate [MPa/s]	0.0392
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	9.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	13/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.00
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	34.00
		Sample Reference	59

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.253°	Fail
		End 1, Diameter 2	0.288°	Fail
		End 2, Diameter 1	0.11°	Pass
		End 2, Diameter 2	0.009°	Pass
Parallelism	0.250°	Diameter 1	-0.162°	Pass
		Diameter 2	-0.291°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.70
Length [mm]	211.03
Length / Diameter Ratio	2.10
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.41
Water Content [%]	12.1
Stress Rate [MPa/s]	0.0586
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	7.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.25
Specimen Description	Grey MUDSTONE, very strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.25
		Sample Reference	11

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.093°	Pass
		End 1, Diameter 2	0.154°	Pass
		End 2, Diameter 1	0.041°	Pass
		End 2, Diameter 2	0.272°	Fail
Parallelism	0.250°	Diameter 1	-0.031°	Pass
		Diameter 2	0.139°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.02
Length [mm]	193.75
Length / Diameter Ratio	1.94
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.59
Water Content [%]	4.1
Stress Rate [MPa/s]	0.0610
Mode of Failure	Multiple Shear
Uniaxial Compressive Strength [MPa]	105.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.49
Specimen Description	Grey MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.49
		Sample Reference	14

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.347°	Fail
		End 1, Diameter 2	0.037°	Pass
		End 2, Diameter 1	0.084°	Pass
		End 2, Diameter 2	0.037°	Pass
Parallelism	0.250°	Diameter 1	-0.263°	Fail
		Diameter 2	0.008°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	96.31
Length [mm]	180.80
Length / Diameter Ratio	1.88
Specimen Condition	as received
Test Results	
Date of Test	21/11/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	12.7
Stress Rate [MPa/s]	0.0591
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	15.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	29.00
Specimen Description	Brown MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	29.00
		Sample Reference	10

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.119°	Pass
		End 1, Diameter 2	0.126°	Pass
		End 2, Diameter 1	0.088°	Pass
		End 2, Diameter 2	0.212°	Pass
Parallelism	0.250°	Diameter 1	-0.068°	Pass
		Diameter 2	0.052°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.08
Length [mm]	216.53
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	14.8
Stress Rate [MPa/s]	0.0594
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	13.2

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.50
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	34.50
		Sample Reference	15

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.035°	Pass
		End 1, Diameter 2	0.126°	Pass
		End 2, Diameter 1	0.215°	Pass
		End 2, Diameter 2	0.092°	Pass
Parallelism	0.250°	Diameter 1	0.291°	Fail
		Diameter 2	-0.501°	Fail
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	74.59
Length [mm]	174.37
Length / Diameter Ratio	2.34
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.42
Water Content [%]	8.6
Stress Rate [MPa/s]	0.0408
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	7.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	38.54
Specimen Description	Brown grey MUDSTONE, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	38.54
		Sample Reference	18

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.17°	Pass
		End 1, Diameter 2	0.22°	Pass
		End 2, Diameter 1	0.145°	Pass
		End 2, Diameter 2	0.052°	Pass
Parallelism	0.250°	Diameter 1	-0.064°	Pass
		Diameter 2	-0.271°	Fail
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.88
Length [mm]	194.41
Length / Diameter Ratio	1.91
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.45
Water Content [%]	7.4
Stress Rate [MPa/s]	0.0372
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	4.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.27
Specimen Description	Grey SILTSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	19.27
		Sample Reference	4

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.09°	Pass
		End 1, Diameter 2	0.136°	Pass
		End 2, Diameter 1	0.711°	Fail
		End 2, Diameter 2	0.334°	Fail
Parallelism	0.250°	Diameter 1	0.545°	Fail
		Diameter 2	0.186°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	79.28
Length [mm]	151.64
Length / Diameter Ratio	1.91
Specimen Condition	as received
Test Results	
Date of Test	09/12/2022
Bulk Density [Mg/m ³]	2.58
Water Content [%]	4.2
Stress Rate [MPa/s]	0.0399
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	45.5

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	13/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.10
Specimen Description	Grey MUDSTONE, strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.10
		Sample Reference	6

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.081°	Pass
		End 1, Diameter 2	0.049°	Pass
		End 2, Diameter 1	0.373°	Fail
		End 2, Diameter 2	0.255°	Fail
Parallelism	0.250°	Diameter 1	0.329°	Fail
		Diameter 2	0.231°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	79.21
Length [mm]	152.42
Length / Diameter Ratio	1.92
Specimen Condition	as received
Test Results	
Date of Test	08/12/2022
Bulk Density [Mg/m ³]	2.58
Water Content [%]	2.0
Stress Rate [MPa/s]	0.0809
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	92.2

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.50
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	27.50
		Sample Reference	13

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.093°	Pass
		End 1, Diameter 2	0.358°	Fail
		End 2, Diameter 1	0.172°	Pass
		End 2, Diameter 2	0.243°	Pass
Parallelism	0.250°	Diameter 1	0.064°	Pass
		Diameter 2	-0.114°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	73.98
Length [mm]	127.10
Length / Diameter Ratio	1.72
Specimen Condition	as received
Test Results	
Date of Test	12/12/2022
Bulk Density [Mg/m ³]	2.38
Water Content [%]	15.4
Stress Rate [MPa/s]	0.0391
Mode of Failure	Multiple Shear
Uniaxial Compressive Strength [MPa]	9.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)			Authorised Date	15/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19 Test specimen <2:1 length to diameter ratio tested at client's request				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.59
Specimen Description	Brown MUDSTONE, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	34.59
		Sample Reference	18

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.116°	Pass
		End 1, Diameter 2	0.19°	Pass
		End 2, Diameter 1	0.071°	Pass
		End 2, Diameter 2	0.312°	Fail
Parallelism	0.250°	Diameter 1	-0.087°	Pass
		Diameter 2	0.182°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.83
Length [mm]	208.88
Length / Diameter Ratio	2.05
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.42
Water Content [%]	9.1
Stress Rate [MPa/s]	0.0388
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	3.7

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.76
Specimen Description	Grey MUDSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	17.76
		Sample Reference	1

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.486°	Fail
		End 1, Diameter 2	0.45°	Fail
		End 2, Diameter 1	0.158°	Pass
		End 2, Diameter 2	0.153°	Pass
Parallelism	0.250°	Diameter 1	-0.376°	Fail
		Diameter 2	-0.288°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.42
Length [mm]	208.51
Length / Diameter Ratio	2.10
Specimen Condition	as received
Test Results	
Date of Test	15/11/2022
Bulk Density [Mg/m ³]	2.51
Water Content [%]	6.5
Stress Rate [MPa/s]	0.0408
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	41.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.29
Specimen Description	Brown MUDSTONE with gypsum veins, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.29
		Sample Reference	4

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.268°	Fail
		End 1, Diameter 2	0.125°	Pass
		End 2, Diameter 1	0.077°	Pass
		End 2, Diameter 2	0.12°	Pass
Parallelism	0.250°	Diameter 1	0.063°	Pass
		Diameter 2	-0.013°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.99
Length [mm]	208.27
Length / Diameter Ratio	2.06
Specimen Condition	as received
Test Results	
Date of Test	15/11/2022
Bulk Density [Mg/m ³]	2.07
Water Content [%]	17.0
Stress Rate [MPa/s]	0.0378
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	4.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.70
Specimen Description	Grey MUDSTONE, strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	19.70
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.143°	Pass
		End 1, Diameter 2	0.281°	Fail
		End 2, Diameter 1	0.296°	Fail
		End 2, Diameter 2	0.207°	Pass
Parallelism	0.250°	Diameter 1	0.131°	Pass
		Diameter 2	-0.104°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.63
Length [mm]	210.73
Length / Diameter Ratio	2.12
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.57
Water Content [%]	3.6
Stress Rate [MPa/s]	0.0601
Mode of Failure	Fragmented
Uniaxial Compressive Strength [MPa]	83.9

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom	
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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.93
Specimen Description	Grey MUDSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.93
		Sample Reference	13

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.201°	Pass
		End 1, Diameter 2	0.046°	Pass
		End 2, Diameter 1	0.035°	Pass
		End 2, Diameter 2	0.044°	Pass
Parallelism	0.250°	Diameter 1	-0.223°	Pass
		Diameter 2	-0.001°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.29
Length [mm]	178.92
Length / Diameter Ratio	1.80
Specimen Condition	as received
Test Results	
Date of Test	21/11/2022
Bulk Density [Mg/m ³]	2.57
Water Content [%]	2.5
Stress Rate [MPa/s]	0.0602
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	40.1

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.40
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.40
		Sample Reference	5

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.043°	Pass
		End 1, Diameter 2	0.077°	Pass
		End 2, Diameter 1	0.162°	Pass
		End 2, Diameter 2	0.085°	Pass
Parallelism	0.250°	Diameter 1	-0.128°	Pass
		Diameter 2	-0.053°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.75
Length [mm]	177.41
Length / Diameter Ratio	1.80
Specimen Condition	as received
Test Results	
Date of Test	14/11/2022
Bulk Density [Mg/m ³]	2.42
Water Content [%]	10.7
Stress Rate [MPa/s]	0.0395
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	10.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE
Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.44
Specimen Description	Brown MUDSTONE with gypsum veins, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.44
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.456°	Fail
		End 1, Diameter 2	0.038°	Pass
		End 2, Diameter 1	0.11°	Pass
		End 2, Diameter 2	0.253°	Fail
Parallelism	0.250°	Diameter 1	-0.362°	Fail
		Diameter 2	0.246°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.66
Length [mm]	204.59
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	15/11/2022
Bulk Density [Mg/m ³]	2.39
Water Content [%]	11.7
Stress Rate [MPa/s]	0.0368
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	3.7

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	17/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.65
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	23.65
		Sample Reference	8

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.102°	Pass
		End 1, Diameter 2	0.088°	Pass
		End 2, Diameter 1	0.251°	Fail
		End 2, Diameter 2	0.06°	Pass
Parallelism	0.250°	Diameter 1	-0.023°	Pass
		Diameter 2	-0.044°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.74
Length [mm]	211.22
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.51
Water Content [%]	8.0
Stress Rate [MPa/s]	0.0492
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	8.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.03
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.03
		Sample Reference	9

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.216°	Pass
		End 1, Diameter 2	0.079°	Pass
		End 2, Diameter 1	0.061°	Pass
		End 2, Diameter 2	0.096°	Pass
Parallelism	0.250°	Diameter 1	-0.155°	Pass
		Diameter 2	0.03°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.80
Length [mm]	207.69
Length / Diameter Ratio	2.10
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.39
Water Content [%]	14.5
Stress Rate [MPa/s]	0.0393
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	12.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Use for RWCNot all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.34
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.34
		Sample Reference	56

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.024°	Pass
		End 1, Diameter 2	0.128°	Pass
		End 2, Diameter 1	0.15°	Pass
		End 2, Diameter 2	0.066°	Pass
Parallelism	0.250°	Diameter 1	0.142°	Pass
		Diameter 2	-0.09°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.19
Length [mm]	206.79
Length / Diameter Ratio	2.06
Specimen Condition	as received
Test Results	
Date of Test	07/12/2022
Bulk Density [Mg/m ³]	2.33
Water Content [%]	14.4
Stress Rate [MPa/s]	0.0393
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	8.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.53
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.53
		Sample Reference	59

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.039°	Pass
		End 1, Diameter 2	0.009°	Pass
		End 2, Diameter 1	0.144°	Pass
		End 2, Diameter 2	0.144°	Pass
Parallelism	0.250°	Diameter 1	0.064°	Pass
		Diameter 2	0.134°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.31
Length [mm]	207.78
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.36
Water Content [%]	14.2
Stress Rate [MPa/s]	0.0588
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	8.1

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.50
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.50
		Sample Reference	8

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.14°	Pass
		End 1, Diameter 2	0.061°	Pass
		End 2, Diameter 1	0.199°	Pass
		End 2, Diameter 2	0.088°	Pass
Parallelism	0.250°	Diameter 1	0.115°	Pass
		Diameter 2	-0.013°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.37
Length [mm]	209.82
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	15/11/2022
Bulk Density [Mg/m ³]	2.38
Water Content [%]	11.7
Stress Rate [MPa/s]	0.0397
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	11.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.72
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.72
		Sample Reference	10

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.075°	Pass
		End 1, Diameter 2	0.068°	Pass
		End 2, Diameter 1	0.104°	Pass
		End 2, Diameter 2	0.173°	Pass
Parallelism	0.250°	Diameter 1	0.041°	Pass
		Diameter 2	0.141°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.49
Length [mm]	208.04
Length / Diameter Ratio	2.05
Specimen Condition	as received
Test Results	
Date of Test	15/11/2022
Bulk Density [Mg/m ³]	2.40
Water Content [%]	12.5
Stress Rate [MPa/s]	0.0392
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	10.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.08
Specimen Description	Grey MUDSTONE, medium strong	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.08
		Sample Reference	9

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.137°	Pass
		End 1, Diameter 2	0.187°	Pass
		End 2, Diameter 1	0.035°	Pass
		End 2, Diameter 2	0.175°	Pass
Parallelism	0.250°	Diameter 1	-0.119°	Pass
		Diameter 2	-0.047°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.93
Length [mm]	211.20
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	23/11/2022
Bulk Density [Mg/m ³]	2.57
Water Content [%]	5.6
Stress Rate [MPa/s]	0.0599
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	40.7

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.94
Specimen Description	Grey MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	21.94
		Sample Reference	12

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.12°	Pass
		End 1, Diameter 2	0.138°	Pass
		End 2, Diameter 1	0.225°	Pass
		End 2, Diameter 2	0.137°	Pass
Parallelism	0.250°	Diameter 1	0.199°	Pass
		Diameter 2	0.024°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	101.96
Length [mm]	190.87
Length / Diameter Ratio	1.87
Specimen Condition	as received
Test Results	
Date of Test	07/12/2022
Bulk Density [Mg/m ³]	2.38
Water Content [%]	9.3
Stress Rate [MPa/s]	0.0489
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	13.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.65
Specimen Description	Grey MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	20.65
		Sample Reference	3

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.119°	Pass
		End 1, Diameter 2	0.109°	Pass
		End 2, Diameter 1	0.177°	Pass
		End 2, Diameter 2	0.256°	Fail
Parallelism	0.250°	Diameter 1	-0.087°	Pass
		Diameter 2	0.134°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.81
Length [mm]	208.98
Length / Diameter Ratio	2.07
Specimen Condition	as received
Test Results	
Date of Test	22/11/2022
Bulk Density [Mg/m ³]	2.48
Water Content [%]	7.6
Stress Rate [MPa/s]	0.0376
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	8.8

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.40
Specimen Description	Brown MUDSTONE, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	22.40
		Sample Reference	7

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.172°	Pass
		End 1, Diameter 2	0.121°	Pass
		End 2, Diameter 1	0.088°	Pass
		End 2, Diameter 2	0.067°	Pass
Parallelism	0.250°	Diameter 1	-0.07°	Pass
		Diameter 2	-0.048°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	99.80
Length [mm]	212.13
Length / Diameter Ratio	2.13
Specimen Condition	as received
Test Results	
Date of Test	21/11/2022
Bulk Density [Mg/m ³]	2.38
Water Content [%]	12.8
Stress Rate [MPa/s]	0.0392
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	11.2

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	24/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	24/11/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.20
Specimen Description	Brown MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	23.33
		Sample Reference	11

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.301°	Fail
		End 1, Diameter 2	0.178°	Pass
		End 2, Diameter 1	0.062°	Pass
		End 2, Diameter 2	0.055°	Pass
Parallelism	0.250°	Diameter 1	-0.197°	Pass
		Diameter 2	0.271°	Fail
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	100.45
Length [mm]	195.60
Length / Diameter Ratio	1.95
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.35
Water Content [%]	13.0
Stress Rate [MPa/s]	0.0594
Mode of Failure	Single Shear
Uniaxial Compressive Strength [MPa]	14.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.35
Specimen Description	Brown MUDSTONE, very weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	16.35
		Sample Reference	35

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.157°	Pass
		End 1, Diameter 2	0.095°	Pass
		End 2, Diameter 1	0.452°	Fail
		End 2, Diameter 2	0.471°	Fail
Parallelism	0.250°	Diameter 1	0.314°	Fail
		Diameter 2	0.329°	Fail
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	97.95
Length [mm]	211.62
Length / Diameter Ratio	2.16
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.41
Water Content [%]	11.6
Stress Rate [MPa/s]	0.0376
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	3.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.57
Specimen Description	Grey MUDSTONE, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.57
		Sample Reference	47

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.057°	Pass
		End 1, Diameter 2	0.121°	Pass
		End 2, Diameter 1	0.397°	Fail
		End 2, Diameter 2	0.302°	Fail
Parallelism	0.250°	Diameter 1	0.3°	Fail
		Diameter 2	0.171°	Pass
Straightness	0.500 mm	All Sides	< 0.500 mm	Pass
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.71
Length [mm]	169.84
Length / Diameter Ratio	1.72
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.43
Water Content [%]	12.7
Stress Rate [MPa/s]	0.0591
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	17.4

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	11/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.42
Specimen Description	Brown MUDSTONE with gypsum veins, weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	13.42
		Sample Reference	3

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.042°	Pass
		End 1, Diameter 2	0.132°	Pass
		End 2, Diameter 1	0.21°	Pass
		End 2, Diameter 2	0.148°	Pass
Parallelism	0.250°	Diameter 1	0.084°	Pass
		Diameter 2	0.043°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	98.21
Length [mm]	209.87
Length / Diameter Ratio	2.14
Specimen Condition	as received
Test Results	
Date of Test	07/12/2022
Bulk Density [Mg/m ³]	2.30
Water Content [%]	17.7
Stress Rate [MPa/s]	0.0380
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	7.0

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Uniaxial Compressive Strength of Rock



1483

Preparation: ASTM D4543-19. Test: ISRM: 2007, page 153, part 1

Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.66
Specimen Description	Grey MUDSTONE with gypsum veins, moderately weak	Sample Type	C
Specimen Reference		Specimen Depth [m]	24.66
		Sample Reference	17

Tolerance Checks				
Parameter	Limit	Location	Data	Result
Perpendicularity	0.250°	End 1, Diameter 1	0.331°	Fail
		End 1, Diameter 2	0.142°	Pass
		End 2, Diameter 1	0.139°	Pass
		End 2, Diameter 2	0.191°	Pass
Parallelism	0.250°	Diameter 1	-0.226°	Pass
		Diameter 2	0.092°	Pass
Straightness	0.500 mm	All Sides	> 0.500 mm	Fail
Flatness	0.025 mm from trendline	All Ends	> 0.025 mm	Fail

Specimen Parameters	
Diameter [mm]	97.36
Length [mm]	188.86
Length / Diameter Ratio	1.94
Specimen Condition	as received
Test Results	
Date of Test	06/12/2022
Bulk Density [Mg/m ³]	2.43
Water Content [%]	12.9
Stress Rate [MPa/s]	0.0586
Mode of Failure	Axial Cleavage
Uniaxial Compressive Strength [MPa]	13.3

Machine information: Controls C56Z00 3000kN Compression Machine. Serial No. 18009103.

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Not all tolerances were met, a best effort was made as required by ASTM D4543-19				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW, United Kingdom

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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index

ISRM 1976-2006, page 125



1483

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	15.00	15.00	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	58.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	62.0	-
Dps' [mm]	97.0	44.0	-
Force [kN]	0.12	0.44	-
Equivalent Diameter [mm]	99.5	75.6	-
Point Load Strength Index, Is [MPa]	<0.1	0.1	-
Point Load Strength Index, Is(50) [MPa]	<0.1	0.1	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.20
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.20	20.20	20.20
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	58.0	-	48.0
Width [mm]	102.0	102.0	80.0
Dps [mm]	102.0	86.0	56.0
Dps' [mm]	96.0	70.0	49.0
Force [kN]	14.43	15.8	12.21
Equivalent Diameter [mm]	99.0	95.3	70.6
Point Load Strength Index, Is [MPa]	1.5	1.7	2.5
Point Load Strength Index, Is(50) [MPa]	2	2.3	2.9
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



1483

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Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.62
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.62	22.75	22.75
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	95.0	-	50.0
Width [mm]	102.0	102.0	76.0
Dps [mm]	102.0	78.0	52.0
Dps' [mm]	91.0	60.0	47.0
Force [kN]	2.54	6.6	1.78
Equivalent Diameter [mm]	96.3	88.3	67.4
Point Load Strength Index, Is [MPa]	0.3	0.9	0.4
Point Load Strength Index, Is(50) [MPa]	0.4	1.1	0.5
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.63
		Sample Type	C
		Sample Reference	11

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.63	24.71	24.71
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	75.0	-	48.0
Width [mm]	102.0	102.0	82.0
Dps [mm]	102.0	84.0	46.0
Dps' [mm]	97.0	70.0	45.0
Force [kN]	3.89	5.38	0.52
Equivalent Diameter [mm]	99.5	95.3	68.5
Point Load Strength Index, I _s [MPa]	0.4	0.6	0.1
Point Load Strength Index, I _s (50) [MPa]	0.5	0.8	0.1
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.40
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	16.40	16.40	16.40
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	64.0	-	43.0
Width [mm]	99.0	100.0	81.0
Dps [mm]	99.0	72.0	46.0
Dps' [mm]	72.0	59.0	33.0
Force [kN]	16.28	14.42	6.27
Equivalent Diameter [mm]	84.4	86.7	58.3
Point Load Strength Index, Is [MPa]	2.3	1.9	1.8
Point Load Strength Index, Is(50) [MPa]	2.9	2.5	2
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.69
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.69	18.79	18.79
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	78.0	-	47.0
Width [mm]	101.0	101.0	93.0
Dps [mm]	101.0	93.0	62.0
Dps' [mm]	93.0	68.0	53.0
Force [kN]	5.32	9.73	3.63
Equivalent Diameter [mm]	96.9	93.5	79.2
Point Load Strength Index, Is [MPa]	0.6	1.1	0.6
Point Load Strength Index, Is(50) [MPa]	0.8	1.5	0.7
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.77
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.77	22.77	22.77
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	63.0	-	47.0
Width [mm]	100.0	100.0	72.0
Dps [mm]	100.0	76.0	55.0
Dps' [mm]	86.0	63.0	48.0
Force [kN]	14.02	19.24	9.9
Equivalent Diameter [mm]	92.7	89.6	66.3
Point Load Strength Index, Is [MPa]	1.6	2.4	2.3
Point Load Strength Index, Is(50) [MPa]	2.2	3.1	2.6
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.48
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.48	23.48	23.48
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	51.0	-	47.0
Width [mm]	99.0	99.0	52.0
Dps [mm]	99.0	54.0	47.0
Dps' [mm]	92.0	37.0	41.0
Force [kN]	2.08	2.67	1.41
Equivalent Diameter [mm]	95.4	68.3	52.1
Point Load Strength Index, I _s [MPa]	0.2	0.6	0.5
Point Load Strength Index, I _s (50) [MPa]	0.3	0.7	0.5
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



ISRM 1976-2006, page 125

1483

Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.64
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.64	24.64	24.64
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	68.0	-	42.0
Width [mm]	100.0	100.0	48.0
Dps [mm]	100.0	35.0	31.0
Dps' [mm]	95.0	25.0	28.0
Force [kN]	0.65	1.23	0.41
Equivalent Diameter [mm]	97.5	56.4	41.4
Point Load Strength Index, Is [MPa]	0.1	0.4	0.2
Point Load Strength Index, Is(50) [MPa]	0.1	0.4	0.2
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



1483

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Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.29
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	16.29	16.29	16.29
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	44.0	48.0
Width [mm]	102.0	50.0	52.0
Dps [mm]	65.0	44.0	41.0
Dps' [mm]	56.0	43.0	40.0
Force [kN]	3.12	1.34	0.97
Equivalent Diameter [mm]	85.3	52.3	51.5
Point Load Strength Index, Is [MPa]	0.4	0.5	0.4
Point Load Strength Index, Is(50) [MPa]	0.6	0.5	0.4
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.48
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.48	19.52	19.52
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	45.0	-	48.0
Width [mm]	101.0	102.0	62.0
Dps [mm]	101.0	59.0	58.0
Dps' [mm]	95.0	48.0	48.0
Force [kN]	0.63	2.11	0.96
Equivalent Diameter [mm]	98.0	79.0	61.6
Point Load Strength Index, Is [MPa]	0.1	0.3	0.3
Point Load Strength Index, Is(50) [MPa]	0.1	0.4	0.3
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.94
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.94	22.94	22.94
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	80.0	-	48.0
Width [mm]	102.0	102.0	82.0
Dps [mm]	102.0	78.0	57.0
Dps' [mm]	96.0	63.0	50.0
Force [kN]	1.38	5.76	2.18
Equivalent Diameter [mm]	99.0	90.5	72.3
Point Load Strength Index, Is [MPa]	0.1	0.7	0.4
Point Load Strength Index, Is(50) [MPa]	0.2	0.9	0.5
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.88
		Sample Type	C
		Sample Reference	7

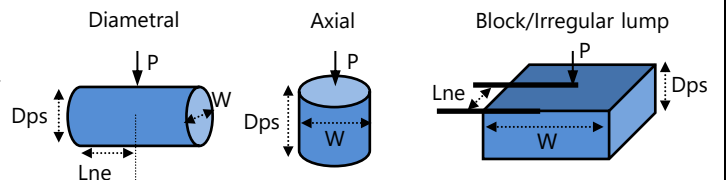
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.88	24.93	24.93
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	62.0	-	45.0
Width [mm]	102.0	102.0	51.0
Dps [mm]	102.0	54.0	41.0
Dps' [mm]	97.0	43.0	27.0
Force [kN]	2.06	4.02	1.56
Equivalent Diameter [mm]	99.5	74.7	41.9
Point Load Strength Index, Is [MPa]	0.2	0.7	0.9
Point Load Strength Index, Is(50) [MPa]	0.3	0.9	0.8
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.78
		Sample Type	C
		Sample Reference	45

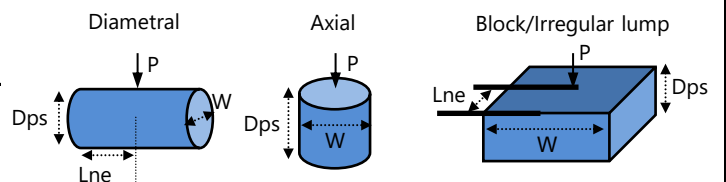
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	14.78	14.88	14.88
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	90.0	-	39.0
Width [mm]	101.0	102.0	78.0
Dps [mm]	101.0	77.0	59.0
Dps' [mm]	97.0	58.0	47.0
Force [kN]	0.21	0.32	0.01
Equivalent Diameter [mm]	99.0	86.8	68.3
Point Load Strength Index, Is [MPa]	<0.1	<0.1	<0.1
Point Load Strength Index, Is(50) [MPa]	<0.1	0.1	<0.1
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.56
		Sample Type	C
		Sample Reference	46

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.56	17.56	17.56
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	63.0	-	35.0
Width [mm]	78.0	78.0	46.0
Dps [mm]	78.0	45.0	42.0
Dps' [mm]	73.0	34.0	37.0
Force [kN]	2.37	3.12	0.41
Equivalent Diameter [mm]	75.5	58.1	46.6
Point Load Strength Index, Is [MPa]	0.4	0.9	0.2
Point Load Strength Index, Is(50) [MPa]	0.5	1	0.2
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.04
		Sample Type	C
		Sample Reference	48

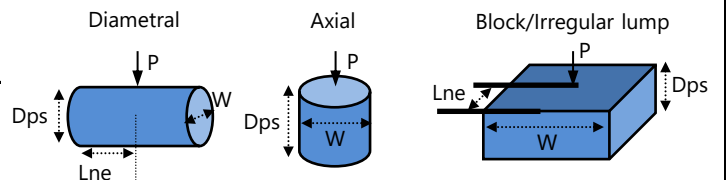
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.04	18.04	18.04
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	62.0	-	51.0
Width [mm]	77.0	77.0	73.0
Dps [mm]	77.0	54.0	43.0
Dps' [mm]	70.0	46.0	32.0
Force [kN]	2.41	0.87	0.78
Equivalent Diameter [mm]	73.4	67.2	54.5
Point Load Strength Index, Is [MPa]	0.5	0.2	0.3
Point Load Strength Index, Is(50) [MPa]	0.5	0.2	0.3
Specimen Description	White GYPSUM	White GYPSUM	White GYPSUM
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.33
		Sample Type	C
		Sample Reference	50

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.33	23.33	23.33
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	36.0	36.0
Width [mm]	76.0	52.0	51.0
Dps [mm]	56.0	37.0	43.0
Dps' [mm]	42.0	31.0	36.0
Force [kN]	1.91	0.89	0.33
Equivalent Diameter [mm]	63.8	45.3	48.3
Point Load Strength Index, I _s [MPa]	0.5	0.4	0.1
Point Load Strength Index, I _s (50) [MPa]	0.5	0.4	0.1
Specimen Description	White GYPSUM	White GYPSUM	White GYPSUM
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.40
		Sample Type	C
		Sample Reference	51

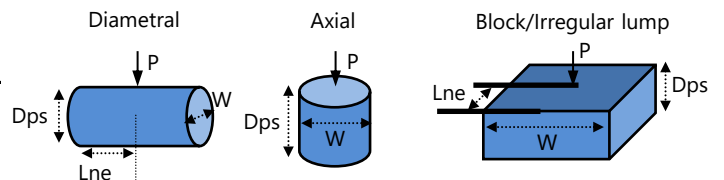
Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	23.40	23.40	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	51.0	-	-
Width [mm]	79.0	79.0	-
Dps [mm]	79.0	59.0	-
Dps' [mm]	76.0	44.0	-
Force [kN]	2.25	14	-
Equivalent Diameter [mm]	77.5	66.5	-
Point Load Strength Index, I _s [MPa]	0.4	3.2	-
Point Load Strength Index, I _s (50) [MPa]	0.5	3.6	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Ln_e - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	16/01/2023
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.71
		Sample Type	C
		Sample Reference	53

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	25.71	25.71	25.71
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	40.0	37.0
Width [mm]	78.0	77.0	71.0
Dps [mm]	74.0	48.0	33.0
Dps' [mm]	58.0	39.0	31.0
Force [kN]	4.25	1.53	0.39
Equivalent Diameter [mm]	75.9	61.8	52.9
Point Load Strength Index, Is [MPa]	0.7	0.4	0.1
Point Load Strength Index, Is(50) [MPa]	0.9	0.4	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	15/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.10
		Sample Type	C
		Sample Reference	55

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	27.10	27.10	27.10
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	63.0	-	38.0
Width [mm]	78.0	79.0	46.0
Dps [mm]	78.0	40.0	42.0
Dps' [mm]	73.0	29.0	37.0
Force [kN]	3.24	3.78	2.01
Equivalent Diameter [mm]	75.5	54.0	46.6
Point Load Strength Index, Is [MPa]	0.6	1.3	0.9
Point Load Strength Index, Is(50) [MPa]	0.7	1.3	0.9
Specimen Description	Brown SILTSTONE with gypsum veins	Brown SILTSTONE with gypsum veins	Brown SILTSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	15/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	30.30
		Sample Type	C
		Sample Reference	59

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	30.30	30.30	30.30
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	49.0	-	51.0
Width [mm]	102.0	102.0	79.0
Dps [mm]	102.0	54.0	55.0
Dps' [mm]	95.0	48.0	49.0
Force [kN]	0.57	0.45	0.78
Equivalent Diameter [mm]	98.4	79.0	70.2
Point Load Strength Index, Is [MPa]	0.1	0.1	0.2
Point Load Strength Index, Is(50) [MPa]	0.1	0.1	0.2
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	32.20
		Sample Type	C
		Sample Reference	61

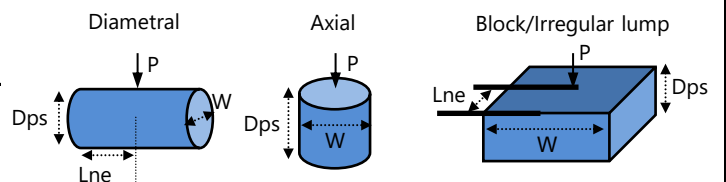
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	32.20	32.20	32.20
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	49.0	50.0
Width [mm]	104.0	100.0	83.0
Dps [mm]	102.0	62.0	35.0
Dps' [mm]	86.0	58.0	19.0
Force [kN]	2.06	1.4	1.87
Equivalent Diameter [mm]	106.7	85.9	44.8
Point Load Strength Index, Is [MPa]	0.2	0.2	0.9
Point Load Strength Index, Is(50) [MPa]	0.3	0.2	0.9
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	33.86
		Sample Type	C
		Sample Reference	63

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	33.86	33.86	33.86
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	38.0	36.0
Width [mm]	81.0	70.0	57.0
Dps [mm]	78.0	44.0	43.0
Dps' [mm]	69.0	36.0	28.0
Force [kN]	3.06	2.02	2.29
Equivalent Diameter [mm]	84.4	56.6	45.1
Point Load Strength Index, Is [MPa]	0.4	0.6	1.1
Point Load Strength Index, Is(50) [MPa]	0.5	0.7	1.1
Specimen Description	White GYPSUM	White GYPSUM	White GYPSUM
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.70
		Sample Type	C
		Sample Reference	64

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	34.70	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	79.0	-	-
Dps [mm]	69.0	-	-
Dps' [mm]	53.0	-	-
Force [kN]	1.17	-	-
Equivalent Diameter [mm]	73.0	-	-
Point Load Strength Index, I _s [MPa]	0.2	-	-
Point Load Strength Index, I _s (50) [MPa]	0.3	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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Project Reference	F212561	Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	37.13
		Sample Type	C
		Sample Reference	66

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	37.13	37.18	31.18
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	49.0	-	47.0
Width [mm]	102.0	102.0	64.0
Dps [mm]	102.0	58.0	30.0
Dps' [mm]	98.0	51.0	20.0
Force [kN]	0.26	3.96	1.52
Equivalent Diameter [mm]	100.0	81.4	40.4
Point Load Strength Index, I _s [MPa]	<0.1	0.6	0.9
Point Load Strength Index, I _s (50) [MPa]	<0.1	0.7	0.8
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.35
		Sample Type	C
		Sample Reference	1

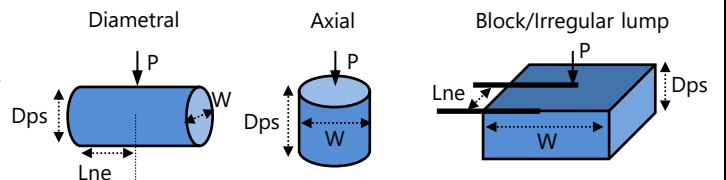
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	16.35	16.35	16.35
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	66.0	-	49.0
Width [mm]	101.0	101.0	64.0
Dps [mm]	101.0	62.0	62.0
Dps' [mm]	97.0	53.0	54.0
Force [kN]	0.14	0.98	0.04
Equivalent Diameter [mm]	99.0	82.6	66.3
Point Load Strength Index, Is [MPa]	<0.1	0.1	<0.1
Point Load Strength Index, Is(50) [MPa]	<0.1	0.2	<0.1
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.15
		Sample Type	C
		Sample Reference	3

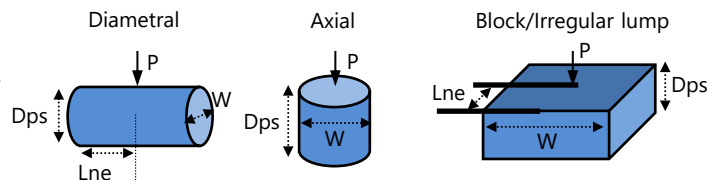
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.15	19.25	19.25
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	108.0	-	47.0
Width [mm]	102.0	102.0	59.0
Dps [mm]	102.0	59.0	48.0
Dps' [mm]	96.0	50.0	35.0
Force [kN]	7.9	3.31	1.42
Equivalent Diameter [mm]	99.0	80.6	51.3
Point Load Strength Index, Is [MPa]	0.8	0.5	0.5
Point Load Strength Index, Is(50) [MPa]	1.1	0.6	0.6
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



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Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.34
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.34	20.34	20.34
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	88.0	-	45.0
Width [mm]	102.0	102.0	63.0
Dps [mm]	102.0	71.0	43.0
Dps' [mm]	96.0	60.0	35.0
Force [kN]	9.45	4.99	12.82
Equivalent Diameter [mm]	99.0	88.3	53.0
Point Load Strength Index, Is [MPa]	1	0.6	4.6
Point Load Strength Index, Is(50) [MPa]	1.3	0.8	4.7
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.27
		Sample Type	C
		Sample Reference	2

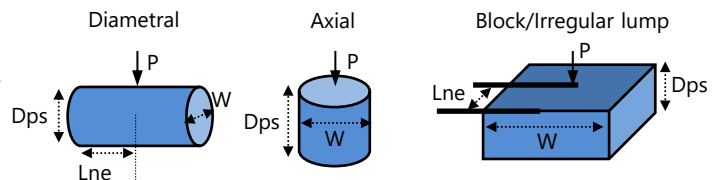
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.27	18.36	18.36
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	69.0	-	49.0
Width [mm]	99.0	99.0	68.0
Dps [mm]	99.0	65.0	53.0
Dps' [mm]	76.0	60.0	47.0
Force [kN]	26.22	17.7	5.65
Equivalent Diameter [mm]	86.7	87.0	63.8
Point Load Strength Index, Is [MPa]	3.5	2.3	1.4
Point Load Strength Index, Is(50) [MPa]	4.5	3	1.6
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.37
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.37	23.37	23.45
Test Type	Diametral	Axial	Axial
Test Direction	U	U	U
Lne [mm]	78.0	-	-
Width [mm]	98.0	99.0	98.0
Dps [mm]	98.0	77.0	82.0
Dps' [mm]	95.0	64.0	74.0
Force [kN]	0.11	0.71	0.39
Equivalent Diameter [mm]	96.5	89.8	96.1
Point Load Strength Index, Is [MPa]	<0.1	0.1	<0.1
Point Load Strength Index, Is(50) [MPa]	<0.1	0.1	0.1
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.54
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.54	24.58	24.58
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	49.0	-	50.0
Width [mm]	101.0	100.0	101.0
Dps [mm]	101.0	82.0	68.0
Dps' [mm]	92.0	58.0	59.0
Force [kN]	13.88	9.71	7.27
Equivalent Diameter [mm]	96.4	85.9	87.1
Point Load Strength Index, Is [MPa]	1.5	1.3	1
Point Load Strength Index, Is(50) [MPa]	2	1.7	1.2
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.78
		Sample Type	C
		Sample Reference	2

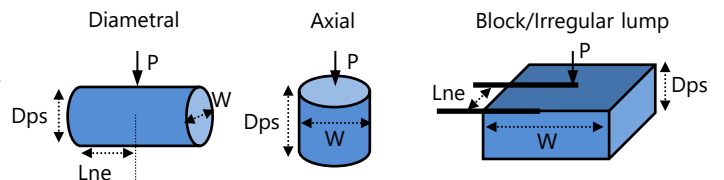
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.78	17.78	17.78
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	62.0	-	46.0
Width [mm]	98.0	100.0	68.0
Dps [mm]	98.0	56.0	50.0
Dps' [mm]	93.0	42.0	47.0
Force [kN]	0.46	0.2	0.09
Equivalent Diameter [mm]	95.5	73.1	63.8
Point Load Strength Index, Is [MPa]	0.1	<0.1	<0.1
Point Load Strength Index, Is(50) [MPa]	0.1	<0.1	<0.1
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.00
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.00	22.06	22.06
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	51.0	-	48.0
Width [mm]	98.0	98.0	55.0
Dps [mm]	98.0	50.0	52.0
Dps' [mm]	92.0	36.0	47.0
Force [kN]	3.91	3.87	1.41
Equivalent Diameter [mm]	95.0	67.0	57.4
Point Load Strength Index, Is [MPa]	0.4	0.9	0.4
Point Load Strength Index, Is(50) [MPa]	0.6	1	0.5
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.80
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.80	24.80	24.80
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	103.0	-	48.0
Width [mm]	101.0	101.0	51.0
Dps [mm]	101.0	54.0	49.0
Dps' [mm]	94.0	42.0	43.0
Force [kN]	3.12	2.2	2.63
Equivalent Diameter [mm]	97.4	73.5	52.8
Point Load Strength Index, Is [MPa]	0.3	0.4	0.9
Point Load Strength Index, Is(50) [MPa]	0.4	0.5	1
Specimen Description	Brown grey MUDSTONE with gypsum veins	Brown grey MUDSTONE with gypsum veins	Brown grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.18
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	17.18	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	100.0	-	-
Dps [mm]	37.0	-	-
Dps' [mm]	35.0	-	-
Force [kN]	1.25	-	-
Equivalent Diameter [mm]	66.8	-	-
Point Load Strength Index, I _s [MPa]	0.3	-	-
Point Load Strength Index, I _s (50) [MPa]	0.3	-	-
Specimen Description	White GYPSUM		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p>					
<p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.08
		Sample Type	C
		Sample Reference	4

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.08	19.08	19.08
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln [mm]	-	50.0	50.0
Width [mm]	101.0	54.0	54.0
Dps [mm]	70.0	46.0	26.0
Dps' [mm]	50.0	44.0	21.0
Force [kN]	4.93	0.37	1.28
Equivalent Diameter [mm]	80.2	55.0	38.0
Point Load Strength Index, Is [MPa]	0.8	0.1	0.9
Point Load Strength Index, Is(50) [MPa]	1	0.1	0.8
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	

LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.27
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.27	21.27	21.27
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	49.0	49.0
Width [mm]	100.0	53.0	50.0
D _{ps} [mm]	58.0	48.0	47.0
D _{ps} ' [mm]	44.0	44.0	42.0
Force [kN]	16.46	6.4	4.31
Equivalent Diameter [mm]	74.8	54.5	51.7
Point Load Strength Index, I _s [MPa]	2.9	2.2	1.6
Point Load Strength Index, I _s (50) [MPa]	3.5	2.2	1.6
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions D_{ps} - Distance between platens (platen separation) D_{ps}' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.40
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.40	23.40	23.40
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	73.0	-	46.0
Width [mm]	101.0	101.0	62.0
Dps [mm]	101.0	82.0	48.0
Dps' [mm]	81.0	60.0	35.0
Force [kN]	10.3	7.21	3.17
Equivalent Diameter [mm]	90.4	87.8	52.6
Point Load Strength Index, Is [MPa]	1.3	0.9	1.2
Point Load Strength Index, Is(50) [MPa]	1.6	1.2	1.2
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Standard Point Load Output.xlsx - Rev 10	

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Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.89
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	16.89	16.99	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	94.0	-	-
Width [mm]	100.0	100.0	-
Dps [mm]	100.0	58.0	-
Dps' [mm]	93.0	48.0	-
Force [kN]	24.65	3.33	-
Equivalent Diameter [mm]	96.4	78.2	-
Point Load Strength Index, I _s [MPa]	2.7	0.6	-
Point Load Strength Index, I _{s(50)} [MPa]	3.6	0.7	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.95
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	17.95	17.95	-
Test Type	Diametral	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	74.0	48.0	-
Width [mm]	100.0	79.0	-
Dps [mm]	100.0	48.0	-
Dps' [mm]	91.0	43.0	-
Force [kN]	1.83	0.05	-
Equivalent Diameter [mm]	95.4	65.8	-
Point Load Strength Index, I _s [MPa]	0.2	<0.1	-
Point Load Strength Index, I _s (50) [MPa]	0.3	<0.1	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.70
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	20.70	20.70	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	87.0	-	-
Width [mm]	101.0	100.0	-
Dps [mm]	101.0	88.0	-
Dps' [mm]	97.0	67.0	-
Force [kN]	1.7	5.72	-
Equivalent Diameter [mm]	99.0	92.4	-
Point Load Strength Index, I _s [MPa]	0.2	0.7	-
Point Load Strength Index, I _s (50) [MPa]	0.2	0.9	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.58
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	22.58	22.58	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	132.0	-	-
Width [mm]	101.0	98.0	-
Dps [mm]	101.0	55.0	-
Dps' [mm]	83.0	41.0	-
Force [kN]	4.94	0.51	-
Equivalent Diameter [mm]	91.6	71.5	-
Point Load Strength Index, I _s [MPa]	0.6	0.1	-
Point Load Strength Index, I _s (50) [MPa]	0.8	0.1	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.90
		Sample Type	C
		Sample Reference	36

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	14.90	14.90	14.90
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	54.0	-	45.0
Width [mm]	101.0	102.0	58.0
Dps [mm]	101.0	56.0	44.0
Dps' [mm]	94.0	40.0	28.0
Force [kN]	0.06	0.06	0.2
Equivalent Diameter [mm]	97.4	72.1	45.5
Point Load Strength Index, Is [MPa]	<0.1	<0.1	0.1
Point Load Strength Index, Is(50) [MPa]	<0.1	<0.1	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
		Sample Type	C
		Sample Reference	37

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	15.00	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	97.0	-	-
Dps [mm]	69.0	-	-
Dps' [mm]	57.0	-	-
Force [kN]	2	-	-
Equivalent Diameter [mm]	83.9	-	-
Point Load Strength Index, I _s [MPa]	0.3	-	-
Point Load Strength Index, I _s (50) [MPa]	0.4	-	-
Specimen Description	White GYPSUM		
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.61
		Sample Type	C
		Sample Reference	40

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.61	17.61	17.61
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	62.0	-	37.0
Width [mm]	79.0	79.0	58.0
Dps [mm]	79.0	63.0	43.0
Dps' [mm]	74.0	47.0	37.0
Force [kN]	2.86	12.18	3.39
Equivalent Diameter [mm]	76.5	68.8	52.3
Point Load Strength Index, Is [MPa]	0.5	2.6	1.2
Point Load Strength Index, Is(50) [MPa]	0.6	3	1.3
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.46
		Sample Type	C
		Sample Reference	41

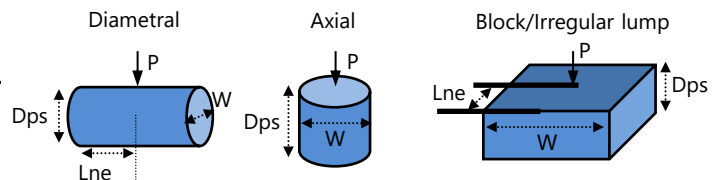
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.46	18.46	18.46
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	67.0	-	37.0
Width [mm]	78.0	78.0	64.0
Dps [mm]	78.0	64.0	38.0
Dps' [mm]	72.0	53.0	33.0
Force [kN]	0.01	2.24	1.11
Equivalent Diameter [mm]	74.9	72.6	51.9
Point Load Strength Index, Is [MPa]	<0.1	0.4	0.4
Point Load Strength Index, Is(50) [MPa]	<0.1	0.5	0.4
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.50
		Sample Type	C
		Sample Reference	42

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.50	20.50	20.50
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	119.0	-	50.0
Width [mm]	103.0	103.0	66.0
Dps [mm]	103.0	69.0	57.0
Dps' [mm]	97.0	58.0	47.0
Force [kN]	20.75	24.8	14.49
Equivalent Diameter [mm]	100.0	87.2	62.8
Point Load Strength Index, Is [MPa]	2.1	3.3	3.7
Point Load Strength Index, Is(50) [MPa]	2.8	4.2	4.1
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.00
		Sample Type	C
		Sample Reference	44

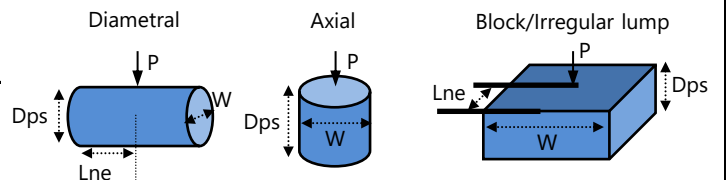
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.00	21.00	21.00
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	96.0	-	39.0
Width [mm]	79.0	79.0	57.0
Dps [mm]	79.0	59.0	48.0
Dps' [mm]	72.0	48.0	43.0
Force [kN]	9.18	13.58	10.02
Equivalent Diameter [mm]	75.4	69.5	55.9
Point Load Strength Index, Is [MPa]	1.6	2.8	3.2
Point Load Strength Index, Is(50) [MPa]	1.9	3.3	3.4
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.92
		Sample Type	C
		Sample Reference	46

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.92	22.92	22.92
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	57.0	-	39.0
Width [mm]	79.0	79.0	45.0
Dps [mm]	79.0	47.0	44.0
Dps' [mm]	73.0	38.0	40.0
Force [kN]	2.6	1.74	0.09
Equivalent Diameter [mm]	75.9	61.8	47.9
Point Load Strength Index, Is [MPa]	0.5	0.5	<0.1
Point Load Strength Index, Is(50) [MPa]	0.5	0.5	<0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.54
		Sample Type	C
		Sample Reference	48

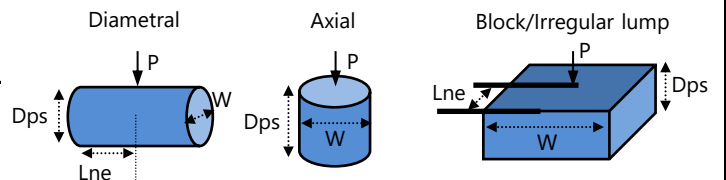
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.54	24.54	24.54
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	97.0	-	47.0
Width [mm]	101.0	101.0	72.0
Dps [mm]	101.0	87.0	63.0
Dps' [mm]	95.0	75.0	61.0
Force [kN]	1.19	1.55	0.53
Equivalent Diameter [mm]	98.0	98.2	74.8
Point Load Strength Index, Is [MPa]	0.1	0.2	0.1
Point Load Strength Index, Is(50) [MPa]	0.2	0.2	0.1
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	26.82
		Sample Type	C
		Sample Reference	51

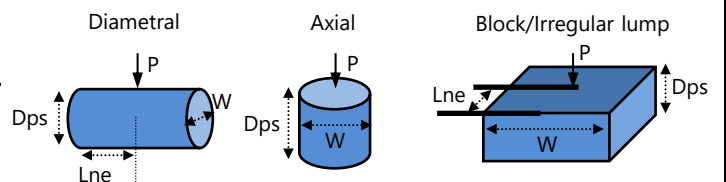
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	26.82	26.82	26.82
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	44.0	-	39.0
Width [mm]	79.0	79.0	56.0
Dps [mm]	79.0	52.0	44.0
Dps' [mm]	75.0	41.0	38.0
Force [kN]	0.29	1.25	0.29
Equivalent Diameter [mm]	77.0	64.2	52.1
Point Load Strength Index, Is [MPa]	0.1	0.3	0.1
Point Load Strength Index, Is(50) [MPa]	0.1	0.3	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	28.70
		Sample Type	C
		Sample Reference	53

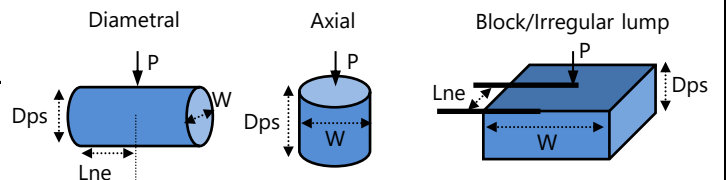
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	28.70	28.70	28.70
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	75.0	-	50.0
Width [mm]	101.0	101.0	56.0
Dps [mm]	101.0	55.0	52.0
Dps' [mm]	99.0	40.0	48.0
Force [kN]	1.93	5.06	3.13
Equivalent Diameter [mm]	100.0	71.7	58.5
Point Load Strength Index, Is [MPa]	0.2	1	0.9
Point Load Strength Index, Is(50) [MPa]	0.3	1.2	1
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	31.35
		Sample Type	C
		Sample Reference	56

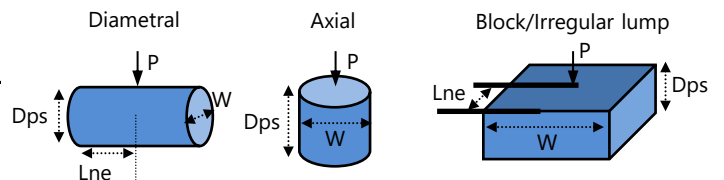
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	31.35	31.39	31.39
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	41.0	-	38.0
Width [mm]	78.0	79.0	51.0
Dps [mm]	78.0	53.0	47.0
Dps' [mm]	72.0	42.0	39.0
Force [kN]	3.42	2.61	2.16
Equivalent Diameter [mm]	74.9	65.0	50.3
Point Load Strength Index, Is [MPa]	0.6	0.6	0.9
Point Load Strength Index, Is(50) [MPa]	0.7	0.7	0.9
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.00
		Sample Type	C
		Sample Reference	59

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	34.00	34.00	34.00
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	104.0	-	49.0
Width [mm]	101.0	101.0	56.0
Dps [mm]	101.0	48.0	49.0
Dps' [mm]	91.0	39.0	35.0
Force [kN]	3.06	2.45	1.91
Equivalent Diameter [mm]	95.9	70.8	50.0
Point Load Strength Index, I _s [MPa]	0.3	0.5	0.8
Point Load Strength Index, I _s (50) [MPa]	0.5	0.6	0.8
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	37.16
		Sample Type	C
		Sample Reference	62

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	37.16	37.16	37.16
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	39.0	-	34.0
Width [mm]	79.0	79.0	47.0
Dps [mm]	79.0	48.0	24.0
Dps' [mm]	72.0	38.0	17.0
Force [kN]	1.12	2.32	0.91
Equivalent Diameter [mm]	75.4	61.8	31.9
Point Load Strength Index, I _s [MPa]	0.2	0.6	0.9
Point Load Strength Index, I _s (50) [MPa]	0.2	0.7	0.7
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	13/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	38.20
		Sample Type	C
		Sample Reference	63

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	38.20	38.20	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	53.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	44.0	-
Dps' [mm]	93.0	39.0	-
Force [kN]	2.01	0.43	-
Equivalent Diameter [mm]	97.4	71.2	-
Point Load Strength Index, Is [MPa]	0.2	0.1	-
Point Load Strength Index, Is(50) [MPa]	0.3	0.1	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	38.48
		Sample Type	C
		Sample Reference	64

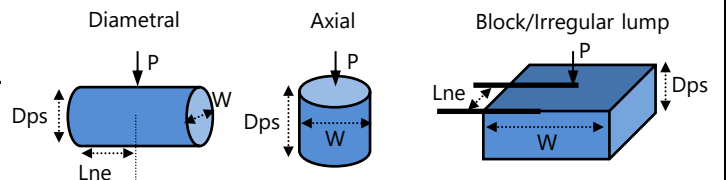
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	38.48	38.48	38.48
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	48.0	24.0
Width [mm]	101.0	65.0	41.0
Dps [mm]	72.0	35.0	36.0
Dps' [mm]	60.0	29.0	29.0
Force [kN]	4.4	1.69	1.25
Equivalent Diameter [mm]	87.8	49.0	38.9
Point Load Strength Index, Is [MPa]	0.6	0.7	0.8
Point Load Strength Index, Is(50) [MPa]	0.7	0.7	0.7
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.57
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	16.57	16.57	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	45.0	-
Width [mm]	99.0	58.0	-
Dps [mm]	60.0	41.0	-
Dps' [mm]	56.0	35.0	-
Force [kN]	0.73	0.93	-
Equivalent Diameter [mm]	84.0	50.8	-
Point Load Strength Index, I _s [MPa]	0.1	0.4	-
Point Load Strength Index, I _s (50) [MPa]	0.1	0.4	-
Specimen Description	White GYPSUM	White GYPSUM	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.66
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	19.66	19.66	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	44.0	-
Width [mm]	97.0	58.0	-
Dps [mm]	67.0	57.0	-
Dps' [mm]	48.0	46.0	-
Force [kN]	5.47	6.76	-
Equivalent Diameter [mm]	77.0	58.3	-
Point Load Strength Index, I _s [MPa]	0.9	2	-
Point Load Strength Index, I _s (50) [MPa]	1.1	2.1	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.67
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	20.67	20.67	-
Test Type	Irregular Lump	Irregular Lump	-
Test Direction	U	U	-
Lne [mm]	40.0	27.0	-
Width [mm]	53.0	54.0	-
Dps [mm]	25.0	25.0	-
Dps' [mm]	15.0	18.0	-
Force [kN]	0.55	0.21	-
Equivalent Diameter [mm]	31.8	35.2	-
Point Load Strength Index, Is [MPa]	0.5	0.2	-
Point Load Strength Index, Is(50) [MPa]	0.4	0.2	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.54
		Sample Type	C
		Sample Reference	12

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	21.54	21.54	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	48.0	-
Width [mm]	99.0	61.0	-
Dps [mm]	62.0	59.0	-
Dps' [mm]	49.0	54.0	-
Force [kN]	3.87	0.88	-
Equivalent Diameter [mm]	78.6	64.8	-
Point Load Strength Index, I _s [MPa]	0.6	0.2	-
Point Load Strength Index, I _s (50) [MPa]	0.8	0.2	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>				
Issue Date	25/11/2022	Certificate Reference	Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests			

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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.45
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	15.45	15.45	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	53.0	-	-
Width [mm]	100.0	101.0	-
Dps [mm]	100.0	56.0	-
Dps' [mm]	93.0	37.0	-
Force [kN]	0.07	8.05	-
Equivalent Diameter [mm]	96.4	69.0	-
Point Load Strength Index, I _s [MPa]	<0.1	1.7	-
Point Load Strength Index, I _s (50) [MPa]	<0.1	2	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.73
		Sample Type	C
		Sample Reference	4

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	22.73	22.73	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	63.0	-	-
Width [mm]	83.0	83.0	-
Dps [mm]	83.0	69.0	-
Dps' [mm]	74.0	53.0	-
Force [kN]	3.89	5.99	-
Equivalent Diameter [mm]	78.4	74.8	-
Point Load Strength Index, I _s [MPa]	0.6	1.1	-
Point Load Strength Index, I _s (50) [MPa]	0.8	1.3	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>				
Issue Date	25/11/2022	Certificate Reference	Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests			

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.70
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	25.70	25.70	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	97.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	54.0	-
Dps' [mm]	95.0	38.0	-
Force [kN]	2.41	8.03	-
Equivalent Diameter [mm]	98.4	70.3	-
Point Load Strength Index, I _s [MPa]	0.3	1.6	-
Point Load Strength Index, I _s (50) [MPa]	0.3	1.9	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	27.40
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	27.40	27.44	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	75.0	-	-
Width [mm]	73.0	74.0	-
Dps [mm]	73.0	45.0	-
Dps' [mm]	65.0	30.0	-
Force [kN]	7.63	6.18	-
Equivalent Diameter [mm]	68.9	53.2	-
Point Load Strength Index, I _s [MPa]	1.6	2.2	-
Point Load Strength Index, I _s (50) [MPa]	1.9	2.3	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	30.98
		Sample Type	C
		Sample Reference	13

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	30.98	30.98	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	38.0	-	-
Width [mm]	77.0	78.0	-
Dps [mm]	77.0	46.0	-
Dps' [mm]	69.0	37.0	-
Force [kN]	3.53	2.07	-
Equivalent Diameter [mm]	72.9	60.6	-
Point Load Strength Index, I _s [MPa]	0.7	0.6	-
Point Load Strength Index, I _s (50) [MPa]	0.8	0.6	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	35.75
		Sample Type	C
		Sample Reference	16

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	35.75	35.75	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	45.0	-	-
Width [mm]	84.0	84.0	-
Dps [mm]	84.0	68.0	-
Dps' [mm]	75.0	49.0	-
Force [kN]	5.68	8.02	-
Equivalent Diameter [mm]	79.4	72.4	-
Point Load Strength Index, I _s [MPa]	0.9	1.5	-
Point Load Strength Index, I _s (50) [MPa]	1.1	1.8	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	39.76
		Sample Type	C
		Sample Reference	20

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	39.76	39.76	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	48.0	-	-
Width [mm]	94.0	102.0	-
Dps [mm]	94.0	40.0	-
Dps' [mm]	93.0	34.0	-
Force [kN]	0.56	1.1	-
Equivalent Diameter [mm]	93.5	66.4	-
Point Load Strength Index, I _s [MPa]	0.1	0.3	-
Point Load Strength Index, I _s (50) [MPa]	0.1	0.3	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	41.29
		Sample Type	C
		Sample Reference	22

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	41.29	41.29	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	36.0	-
Width [mm]	78.0	40.0	-
Dps [mm]	49.0	26.0	-
Dps' [mm]	33.0	19.0	-
Force [kN]	3.86	1.6	-
Equivalent Diameter [mm]	57.2	31.1	-
Point Load Strength Index, I _s [MPa]	1.2	1.7	-
Point Load Strength Index, I _s (50) [MPa]	1.3	1.3	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.35
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	15.35	15.35	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	68.0	-	-
Width [mm]	101.0	101.0	-
Dps [mm]	101.0	56.0	-
Dps' [mm]	100.0	40.0	-
Force [kN]	0.05	0.13	-
Equivalent Diameter [mm]	100.5	71.7	-
Point Load Strength Index, Is [MPa]	<0.1	<0.1	-
Point Load Strength Index, Is(50) [MPa]	<0.1	<0.1	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.24
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	16.24	16.24	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	61.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	53.0	-
Dps' [mm]	99.0	39.0	-
Force [kN]	1.52	0.11	-
Equivalent Diameter [mm]	100.5	71.2	-
Point Load Strength Index, Is [MPa]	0.2	<0.1	-
Point Load Strength Index, Is(50) [MPa]	0.2	<0.1	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random			
Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P			
Issue Date	12/12/2022	Certificate Reference	
Client	SSE Generation Limited (SSE)	Authorised by	alcocka
Remarks:	Size factor, F = (De/50)0.45 for all tests		

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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.48
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	19.48	19.48	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	39.0	-	-
Width [mm]	79.0	80.0	-
Dps [mm]	79.0	47.0	-
Dps' [mm]	72.0	41.0	-
Force [kN]	10.52	5.21	-
Equivalent Diameter [mm]	75.4	64.6	-
Point Load Strength Index, I _s [MPa]	1.9	1.3	-
Point Load Strength Index, I _s (50) [MPa]	2.2	1.4	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random			
Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln _e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P			
Issue Date	12/12/2022	Certificate Reference	
Client	SSE Generation Limited (SSE)	Authorised by	alcocka
Remarks:	Size factor, F = (De/50)0.45 for all tests		

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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.33
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	21.33	21.33	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	59.0	-	-
Width [mm]	102.0	101.0	-
Dps [mm]	102.0	69.0	-
Dps' [mm]	94.0	55.0	-
Force [kN]	5.65	3.68	-
Equivalent Diameter [mm]	97.9	84.1	-
Point Load Strength Index, I _s [MPa]	0.6	0.5	-
Point Load Strength Index, I _s (50) [MPa]	0.8	0.7	-
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.90
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	24.90	24.90	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	47.0	-	-
Width [mm]	79.0	79.0	-
Dps [mm]	79.0	63.0	-
Dps' [mm]	74.0	40.0	-
Force [kN]	5.04	3.84	-
Equivalent Diameter [mm]	76.5	63.4	-
Point Load Strength Index, I _s [MPa]	0.9	1	-
Point Load Strength Index, I _s (50) [MPa]	1	1.1	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	26.87
		Sample Type	C
		Sample Reference	12

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	26.87	26.87	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	31.0	-	-
Width [mm]	40.0	40.0	-
Dps [mm]	40.0	33.0	-
Dps' [mm]	36.0	23.0	-
Force [kN]	2.71	2.22	-
Equivalent Diameter [mm]	37.9	34.2	-
Point Load Strength Index, I _s [MPa]	1.9	1.9	-
Point Load Strength Index, I _s (50) [MPa]	1.7	1.6	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	29.69
		Sample Type	C
		Sample Reference	14

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	29.69	29.69	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	60.0	-	-
Width [mm]	100.0	100.0	-
Dps [mm]	100.0	63.0	-
Dps' [mm]	92.0	53.0	-
Force [kN]	1.78	2.01	-
Equivalent Diameter [mm]	95.9	82.1	-
Point Load Strength Index, Is [MPa]	0.2	0.3	-
Point Load Strength Index, Is(50) [MPa]	0.3	0.4	-
Specimen Description	Brown grey MUDSTONE	Brown grey MUDSTONE	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	33.02
		Sample Type	C
		Sample Reference	17

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	33.02	33.02	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	25.0	-	-
Width [mm]	40.0	40.0	-
Dps [mm]	40.0	26.0	-
Dps' [mm]	36.0	20.0	-
Force [kN]	0.75	1.68	-
Equivalent Diameter [mm]	37.9	31.9	-
Point Load Strength Index, Is [MPa]	0.5	1.7	-
Point Load Strength Index, Is(50) [MPa]	0.5	1.4	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	34.96
		Sample Type	C
		Sample Reference	19

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	34.60	34.96	-
Test Type	Diametral	Irregular Lump	-
Test Direction	U	U	-
Lne [mm]	100.0	54.0	-
Width [mm]	101.0	80.0	-
Dps [mm]	101.0	54.0	-
Dps' [mm]	76.0	38.0	-
Force [kN]	1.5	0.77	-
Equivalent Diameter [mm]	87.6	62.2	-
Point Load Strength Index, Is [MPa]	0.2	0.2	-
Point Load Strength Index, Is(50) [MPa]	0.3	0.2	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	35.89
		Sample Type	C
		Sample Reference	21

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	35.89	35.89	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	46.0	-	-
Width [mm]	72.0	72.0	-
Dps [mm]	72.0	42.0	-
Dps' [mm]	69.0	35.0	-
Force [kN]	0.14	0.83	-
Equivalent Diameter [mm]	70.5	56.6	-
Point Load Strength Index, Is [MPa]	<0.1	0.3	-
Point Load Strength Index, Is(50) [MPa]	<0.1	0.3	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	38.50
		Sample Type	C
		Sample Reference	23

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	38.50	38.50	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	50.0	-
Width [mm]	102.0	52.0	-
Dps [mm]	52.0	50.0	-
Dps' [mm]	39.0	47.0	-
Force [kN]	15.01	4.03	-
Equivalent Diameter [mm]	71.2	55.8	-
Point Load Strength Index, I _s [MPa]	3	1.3	-
Point Load Strength Index, I _s (50) [MPa]	3.5	1.4	-
Specimen Description	Brown grey MUDSTONE	Brown grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	38.54
		Sample Type	C
		Sample Reference	24

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	38.54	38.54	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	66.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	34.0	-
Dps' [mm]	97.0	28.0	-
Force [kN]	0.01	2.87	-
Equivalent Diameter [mm]	99.5	60.3	-
Point Load Strength Index, Is [MPa]	<0.1	0.8	-
Point Load Strength Index, Is(50) [MPa]	<0.1	0.9	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	39.64
		Sample Type	C
		Sample Reference	25

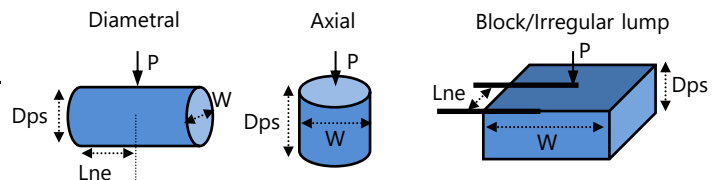
Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	39.64	39.64	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Lne [mm]	-	48.0	-
Width [mm]	102.0	55.0	-
Dps [mm]	66.0	24.0	-
Dps' [mm]	50.0	19.0	-
Force [kN]	5.18	0.53	-
Equivalent Diameter [mm]	80.6	36.5	-
Point Load Strength Index, Is [MPa]	0.8	0.4	-
Point Load Strength Index, Is(50) [MPa]	1	0.4	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	39.90
		Sample Type	C
		Sample Reference	27

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	39.90	39.90	-
Test Type	Axial	Irregular Lump	-
Test Direction	U	U	-
Ln _e [mm]	-	43.0	-
Width [mm]	100.0	51.0	-
Dps [mm]	49.0	38.0	-
Dps' [mm]	38.0	32.0	-
Force [kN]	2.91	1.49	-
Equivalent Diameter [mm]	69.6	45.6	-
Point Load Strength Index, I _s [MPa]	0.6	0.7	-
Point Load Strength Index, I _s (50) [MPa]	0.7	0.7	-
Specimen Description	Wite GYPSUM	White GYPSUM	
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.13
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.13	19.19	19.19
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	67.0	-	48.0
Width [mm]	97.0	99.0	76.0
Dps [mm]	97.0	77.0	58.0
Dps' [mm]	86.0	66.0	34.0
Force [kN]	9.85	9.72	4.08
Equivalent Diameter [mm]	91.3	91.2	57.4
Point Load Strength Index, Is [MPa]	1.2	1.2	1.2
Point Load Strength Index, Is(50) [MPa]	1.6	1.5	1.3
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.53
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.53	24.59	24.59
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	58.0	-	48.0
Width [mm]	98.0	98.0	66.0
Dps [mm]	98.0	63.0	57.0
Dps' [mm]	90.0	49.0	52.0
Force [kN]	1.59	3.3	2.17
Equivalent Diameter [mm]	93.9	78.2	66.1
Point Load Strength Index, Is [MPa]	0.2	0.5	0.5
Point Load Strength Index, Is(50) [MPa]	0.2	0.7	0.6
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.48
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	16.48	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln [mm]	-	-	-
Width [mm]	100.0	-	-
Dps [mm]	46.0	-	-
Dps' [mm]	36.0	-	-
Force [kN]	2.46	-	-
Equivalent Diameter [mm]	67.7	-	-
Point Load Strength Index, Is [MPa]	0.5	-	-
Point Load Strength Index, Is(50) [MPa]	0.6	-	-
Specimen Description	White GYPSUM		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.80
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.80	18.80	18.80
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	70.0	-	48.0
Width [mm]	101.0	100.0	96.0
Dps [mm]	101.0	88.0	71.0
Dps' [mm]	92.0	68.0	60.0
Force [kN]	2.46	12.82	4.43
Equivalent Diameter [mm]	96.4	93.0	85.6
Point Load Strength Index, I _s [MPa]	0.3	1.5	0.6
Point Load Strength Index, I _s (50) [MPa]	0.4	2	0.8
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.00
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.00	20.00	20.00
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	70.0	-	48.0
Width [mm]	99.0	99.0	75.0
Dps [mm]	99.0	77.0	43.0
Dps' [mm]	96.0	63.0	37.0
Force [kN]	12.35	24.51	13.66
Equivalent Diameter [mm]	97.5	89.1	59.4
Point Load Strength Index, Is [MPa]	1.3	3.1	3.9
Point Load Strength Index, Is(50) [MPa]	1.8	4	4.2
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	

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Determination of Point Load Strength Index



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1483

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.13
		Sample Type	C
		Sample Reference	12

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.13	24.13	24.13
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	61.0	-	43.0
Width [mm]	99.0	97.0	69.0
Dps [mm]	99.0	62.0	59.0
Dps' [mm]	90.0	47.0	38.0
Force [kN]	3.97	3.19	3.35
Equivalent Diameter [mm]	94.4	76.2	57.8
Point Load Strength Index, I _s [MPa]	0.5	0.6	1
Point Load Strength Index, I _s (50) [MPa]	0.6	0.7	1.1
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.66
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	16.66	16.74	16.74
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	63.0	-	48.0
Width [mm]	100.0	99.0	52.0
Dps [mm]	100.0	39.0	39.0
Dps' [mm]	92.0	34.0	36.0
Force [kN]	15.08	6.61	5.37
Equivalent Diameter [mm]	95.9	65.5	48.8
Point Load Strength Index, Is [MPa]	1.6	1.5	2.3
Point Load Strength Index, Is(50) [MPa]	2.2	1.7	2.2
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.90
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.90	18.94	18.94
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	59.0	-	43.0
Width [mm]	98.0	99.0	81.0
Dps [mm]	98.0	81.0	61.0
Dps' [mm]	92.0	58.0	53.0
Force [kN]	0.5	1.22	0.87
Equivalent Diameter [mm]	95.0	85.5	73.9
Point Load Strength Index, Is [MPa]	0.1	0.2	0.2
Point Load Strength Index, Is(50) [MPa]	0.1	0.2	0.2
Specimen Description	Grey brown MUDSTONE	Grey brown MUDSTONE	Grey brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.18
		Sample Type	C
		Sample Reference	4

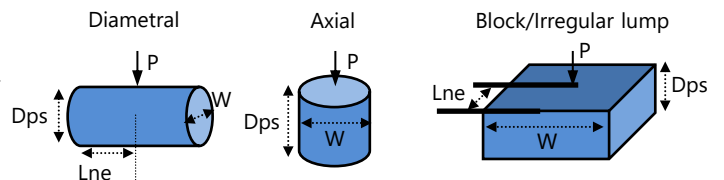
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.18	20.23	20.23
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	54.0	-	47.0
Width [mm]	98.0	99.0	63.0
Dps [mm]	98.0	82.0	57.0
Dps' [mm]	92.0	62.0	49.0
Force [kN]	2.47	6.98	1.45
Equivalent Diameter [mm]	95.0	88.4	62.7
Point Load Strength Index, Is [MPa]	0.3	0.9	0.4
Point Load Strength Index, Is(50) [MPa]	0.4	1.2	0.4
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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1483

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.22
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.22	22.22	22.22
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	63.0	-	46.0
Width [mm]	98.0	98.0	65.0
Dps [mm]	98.0	64.0	59.0
Dps' [mm]	92.0	52.0	49.0
Force [kN]	0.78	1.09	0.61
Equivalent Diameter [mm]	95.0	80.6	63.7
Point Load Strength Index, I _s [MPa]	0.1	0.2	0.2
Point Load Strength Index, I _s (50) [MPa]	0.1	0.2	0.2
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.70
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	14.70	14.70	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	92.0	-	-
Width [mm]	101.0	101.0	-
Dps [mm]	101.0	85.0	-
Dps' [mm]	94.0	66.0	-
Force [kN]	0.09	0.34	-
Equivalent Diameter [mm]	97.4	92.1	-
Point Load Strength Index, I _s [MPa]	<0.1	<0.1	-
Point Load Strength Index, I _s (50) [MPa]	<0.1	0.1	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.80
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	17.80	17.91	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	82.0	-	-
Width [mm]	102.0	102.0	-
Dps [mm]	102.0	85.0	-
Dps' [mm]	92.0	61.0	-
Force [kN]	6	6.56	-
Equivalent Diameter [mm]	96.9	89.0	-
Point Load Strength Index, I _s [MPa]	0.6	0.8	-
Point Load Strength Index, I _{s(50)} [MPa]	0.9	1.1	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.38
		Sample Type	C
		Sample Reference	5

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	20.38	20.38	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	95.0	-	-
Width [mm]	100.0	99.0	-
Dps [mm]	100.0	93.0	-
Dps' [mm]	84.0	74.0	-
Force [kN]	12.36	13.32	-
Equivalent Diameter [mm]	91.7	96.6	-
Point Load Strength Index, I _s [MPa]	1.5	1.4	-
Point Load Strength Index, I _s (50) [MPa]	1.9	1.9	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.90
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	21.90	21.90	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	120.0	-	-
Width [mm]	100.0	99.0	-
Dps [mm]	100.0	49.0	-
Dps' [mm]	92.0	34.0	-
Force [kN]	4.75	3.25	-
Equivalent Diameter [mm]	95.9	65.5	-
Point Load Strength Index, I _s [MPa]	0.5	0.8	-
Point Load Strength Index, I _s (50) [MPa]	0.7	0.9	-
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.15
		Sample Type	C
		Sample Reference	45

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	14.15	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	99.0	-	-
Dps [mm]	63.0	-	-
Dps' [mm]	55.0	-	-
Force [kN]	4.4	-	-
Equivalent Diameter [mm]	83.3	-	-
Point Load Strength Index, I _s [MPa]	0.6	-	-
Point Load Strength Index, I _s (50) [MPa]	0.8	-	-
Specimen Description	Grey MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.69
		Sample Type	C
		Sample Reference	47

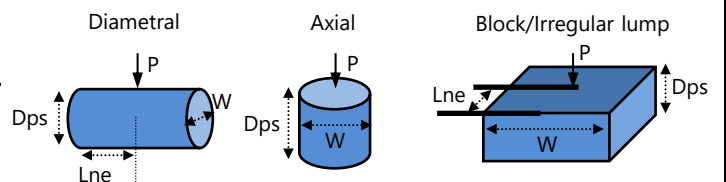
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	15.69	15.73	15.73
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	56.0	-	49.0
Width [mm]	101.0	102.0	76.0
Dps [mm]	101.0	72.0	62.0
Dps' [mm]	98.0	55.0	51.0
Force [kN]	0.44	0.77	0.51
Equivalent Diameter [mm]	99.5	84.5	70.3
Point Load Strength Index, Is [MPa]	<0.1	0.1	0.1
Point Load Strength Index, Is(50) [MPa]	0.1	0.1	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.27
		Sample Type	C
		Sample Reference	52

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	19.27	19.27	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	68.0	-	-
Width [mm]	98.0	98.0	-
Dps [mm]	98.0	36.0	-
Dps' [mm]	93.0	33.0	-
Force [kN]	1.23	0.9	-
Equivalent Diameter [mm]	95.5	64.2	-
Point Load Strength Index, Is [MPa]	0.1	0.2	-
Point Load Strength Index, Is(50) [MPa]	0.2	0.2	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.56
		Sample Type	C
		Sample Reference	53

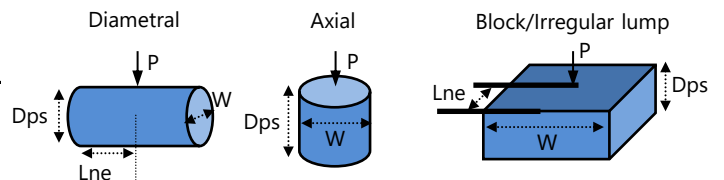
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.56	19.56	19.56
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	95.0	-	47.0
Width [mm]	100.0	98.0	57.0
Dps [mm]	100.0	65.0	54.0
Dps' [mm]	93.0	42.0	51.0
Force [kN]	4.64	9.49	1.59
Equivalent Diameter [mm]	96.4	72.4	60.8
Point Load Strength Index, Is [MPa]	0.5	1.8	0.4
Point Load Strength Index, Is(50) [MPa]	0.7	2.1	0.5
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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1483

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.66
		Sample Type	C
		Sample Reference	57

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.66	22.66	22.66
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	98.0	-	48.0
Width [mm]	99.0	102.0	68.0
Dps [mm]	99.0	75.0	53.0
Dps' [mm]	91.0	57.0	43.0
Force [kN]	4.59	12.62	6.02
Equivalent Diameter [mm]	94.9	86.0	61.0
Point Load Strength Index, Is [MPa]	0.5	1.7	1.6
Point Load Strength Index, Is(50) [MPa]	0.7	2.2	1.8
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.40
		Sample Type	C
		Sample Reference	58

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.40	24.40	24.40
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	58.0	-	49.0
Width [mm]	100.0	100.0	91.0
Dps [mm]	100.0	83.0	66.0
Dps' [mm]	85.0	69.0	56.0
Force [kN]	2.25	5.04	0.85
Equivalent Diameter [mm]	92.2	93.7	80.6
Point Load Strength Index, Is [MPa]	0.3	0.6	0.1
Point Load Strength Index, Is(50) [MPa]	0.4	0.8	0.2
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.10
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.10	17.10	17.10
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	59.0	-	50.0
Width [mm]	102.0	102.0	68.0
Dps [mm]	102.0	72.0	55.0
Dps' [mm]	96.0	53.0	47.0
Force [kN]	12.09	12.16	5.91
Equivalent Diameter [mm]	99.0	83.0	63.8
Point Load Strength Index, Is [MPa]	1.2	1.8	1.5
Point Load Strength Index, Is(50) [MPa]	1.7	2.2	1.6
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.24
		Sample Type	C
		Sample Reference	3

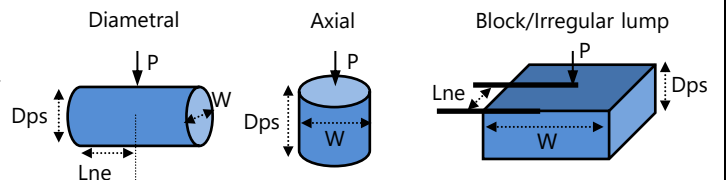
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.24	19.34	19.34
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	76.0	-	48.0
Width [mm]	102.0	102.0	59.0
Dps [mm]	102.0	61.0	56.0
Dps' [mm]	100.0	46.0	49.0
Force [kN]	1.59	1.35	1.04
Equivalent Diameter [mm]	101.0	77.3	60.7
Point Load Strength Index, Is [MPa]	0.2	0.2	0.3
Point Load Strength Index, Is(50) [MPa]	0.2	0.3	0.3
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	07/11/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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1483

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.80
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.80	20.85	20.85
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	103.0	-	41.0
Width [mm]	102.0	102.0	55.0
Dps [mm]	102.0	53.0	50.0
Dps' [mm]	96.0	44.0	41.0
Force [kN]	2.03	2.28	0.58
Equivalent Diameter [mm]	99.0	75.6	53.6
Point Load Strength Index, Is [MPa]	0.2	0.4	0.2
Point Load Strength Index, Is(50) [MPa]	0.3	0.5	0.2
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.41
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.41	24.51	24.51
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	85.0	-	48.0
Width [mm]	101.0	101.0	51.0
Dps [mm]	101.0	49.0	49.0
Dps' [mm]	90.0	42.0	43.0
Force [kN]	2.92	0.66	0.53
Equivalent Diameter [mm]	95.3	73.5	52.8
Point Load Strength Index, Is [MPa]	0.3	0.1	0.2
Point Load Strength Index, Is(50) [MPa]	0.4	0.2	0.2
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	07/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	07/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.76
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	18.76	18.76	18.76
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	31.0	49.0
Width [mm]	99.0	73.0	51.0
Dps [mm]	72.0	50.0	32.0
Dps' [mm]	60.0	41.0	28.0
Force [kN]	2.51	1.02	1.2
Equivalent Diameter [mm]	87.0	61.7	42.6
Point Load Strength Index, I _s [MPa]	0.3	0.3	0.7
Point Load Strength Index, I _s (50) [MPa]	0.4	0.3	0.6
Specimen Description	White GYPSUM	White GYPSUM	White GYPSUM
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.62
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.62	20.62	20.62
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln [mm]	-	46.0	41.0
Width [mm]	98.0	57.0	62.0
Dps [mm]	85.0	35.0	38.0
Dps' [mm]	74.0	27.0	24.0
Force [kN]	0.67	0.19	1.15
Equivalent Diameter [mm]	96.1	44.3	43.5
Point Load Strength Index, Is [MPa]	0.1	0.1	0.6
Point Load Strength Index, Is(50) [MPa]	0.1	0.1	0.6
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.40
		Sample Type	C
		Sample Reference	4

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.40	22.40	22.40
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	64.0	-	49.0
Width [mm]	98.0	98.0	64.0
Dps [mm]	98.0	74.0	37.0
Dps' [mm]	92.0	64.0	25.0
Force [kN]	0.43	1.53	0.23
Equivalent Diameter [mm]	95.0	89.4	45.1
Point Load Strength Index, I _s [MPa]	0.1	0.2	0.1
Point Load Strength Index, I _s (50) [MPa]	0.1	0.3	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.05
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.05	24.05	24.05
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	47.0	49.0
Width [mm]	99.0	72.0	73.0
Dps [mm]	74.0	48.0	56.0
Dps' [mm]	58.0	41.0	47.0
Force [kN]	6.12	1.89	2.13
Equivalent Diameter [mm]	85.5	61.3	66.1
Point Load Strength Index, I _s [MPa]	0.8	0.5	0.5
Point Load Strength Index, I _s (50) [MPa]	1.1	0.6	0.6
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.48
		Sample Type	C
		Sample Reference	7

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.48	24.48	24.48
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	43.0	44.0
Width [mm]	97.0	77.0	74.0
Dps [mm]	79.0	45.0	39.0
Dps' [mm]	66.0	39.0	38.0
Force [kN]	0.24	0.12	0.08
Equivalent Diameter [mm]	90.3	61.8	59.8
Point Load Strength Index, I _s [MPa]	<0.1	<0.1	<0.1
Point Load Strength Index, I _s (50) [MPa]	<0.1	<0.1	<0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.10
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	25.10	25.10	25.10
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	47.0	45.0
Width [mm]	99.0	69.0	51.0
Dps [mm]	60.0	55.0	47.0
Dps' [mm]	51.0	46.0	38.0
Force [kN]	1.49	0.15	1.79
Equivalent Diameter [mm]	80.2	63.6	49.7
Point Load Strength Index, I _s [MPa]	0.2	<0.1	0.7
Point Load Strength Index, I _s (50) [MPa]	0.3	<0.1	0.7
Specimen Description	White GYPSUM	White GYPSUM	White GYPSUM
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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1483

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.79
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	14.79	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln [mm]	-	-	-
Width [mm]	102.0	-	-
Dps [mm]	49.0	-	-
Dps' [mm]	35.0	-	-
Force [kN]	0.51	-	-
Equivalent Diameter [mm]	67.4	-	-
Point Load Strength Index, Is [MPa]	0.1	-	-
Point Load Strength Index, Is(50) [MPa]	0.1	-	-
Specimen Description	Grey MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	

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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.28
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.28	17.28	17.28
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	54.0	-	47.0
Width [mm]	102.0	101.0	54.0
D _{ps} [mm]	102.0	54.0	52.0
D _{ps} ' [mm]	96.0	41.0	42.0
Force [kN]	0.18	0.82	0.24
Equivalent Diameter [mm]	99.0	72.6	53.7
Point Load Strength Index, I _s [MPa]	<0.1	0.2	0.1
Point Load Strength Index, I _s (50) [MPa]	<0.1	0.2	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions D_{ps} - Distance between platens (platen separation) D_{ps}' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.85
		Sample Type	C
		Sample Reference	10

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.85	20.85	20.85
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	61.0	-	50.0
Width [mm]	102.0	102.0	52.0
Dps [mm]	102.0	71.0	48.0
Dps' [mm]	94.0	48.0	47.0
Force [kN]	0.15	7.22	1.95
Equivalent Diameter [mm]	97.9	79.0	55.8
Point Load Strength Index, I _s [MPa]	<0.1	1.2	0.6
Point Load Strength Index, I _s (50) [MPa]	<0.1	1.4	0.7
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.00
		Sample Type	C
		Sample Reference	11

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.00	21.00	21.00
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	82.0	-	45.0
Width [mm]	102.0	102.0	58.0
Dps [mm]	102.0	63.0	56.0
Dps' [mm]	98.0	46.0	52.0
Force [kN]	0.05	0.52	0.34
Equivalent Diameter [mm]	100.0	77.3	62.0
Point Load Strength Index, Is [MPa]	<0.1	0.1	0.1
Point Load Strength Index, Is(50) [MPa]	<0.1	0.1	0.1
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.58
		Sample Type	C
		Sample Reference	13

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.58	23.58	23.58
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	42.0	40.0
Width [mm]	102.0	65.0	57.0
Dps [mm]	67.0	44.0	54.0
Dps' [mm]	51.0	41.0	39.0
Force [kN]	0.6	0.44	0.42
Equivalent Diameter [mm]	81.4	58.3	53.2
Point Load Strength Index, I _s [MPa]	0.1	0.1	0.2
Point Load Strength Index, I _s (50) [MPa]	0.1	0.1	0.2
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	15/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.77
		Sample Type	C
		Sample Reference	14

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	23.77	23.77	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	63.0	-	-
Width [mm]	102.0	103.0	-
Dps [mm]	102.0	95.0	-
Dps' [mm]	87.0	62.0	-
Force [kN]	7.49	1.96	-
Equivalent Diameter [mm]	94.2	90.2	-
Point Load Strength Index, I _s [MPa]	0.8	0.2	-
Point Load Strength Index, I _s (50) [MPa]	1.1	0.3	-
Specimen Description	Brown MUDSTONE with gypsum veins	Brown MUDSTONE with gypsum veins	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.80
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	19.80	19.80	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	70.0	-	-
Width [mm]	101.0	100.0	-
Dps [mm]	101.0	57.0	-
Dps' [mm]	91.0	51.0	-
Force [kN]	0.73	0.26	-
Equivalent Diameter [mm]	95.9	80.6	-
Point Load Strength Index, I _s [MPa]	0.1	<0.1	-
Point Load Strength Index, I _s (50) [MPa]	0.1	0.1	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.15
		Sample Type	C
		Sample Reference	4

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	22.15	22.15	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	65.0	-	-
Width [mm]	101.0	101.0	-
Dps [mm]	101.0	64.0	-
Dps' [mm]	93.0	42.0	-
Force [kN]	13.53	25.19	-
Equivalent Diameter [mm]	96.9	73.5	-
Point Load Strength Index, I _s [MPa]	1.4	4.7	-
Point Load Strength Index, I _s (50) [MPa]	1.9	5.6	-
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.15
		Sample Type	C
		Sample Reference	6

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	24.15	24.15	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Ln _e [mm]	88.0	-	-
Width [mm]	100.0	100.0	-
Dps [mm]	100.0	90.0	-
Dps' [mm]	94.0	84.0	-
Force [kN]	0.83	2.66	-
Equivalent Diameter [mm]	97.0	103.4	-
Point Load Strength Index, I _s [MPa]	0.1	0.3	-
Point Load Strength Index, I _s (50) [MPa]	0.1	0.4	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.06
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	18.06	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	99.0	-	-
Dps [mm]	74.0	-	-
Dps' [mm]	60.0	-	-
Force [kN]	3.39	-	-
Equivalent Diameter [mm]	87.0	-	-
Point Load Strength Index, I _s [MPa]	0.5	-	-
Point Load Strength Index, I _s (50) [MPa]	0.6	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.80
		Sample Type	C
		Sample Reference	6

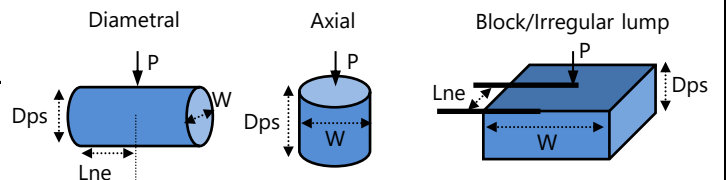
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	19.80	19.80	19.80
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	47.0	42.0
Width [mm]	97.0	63.0	44.0
Dps [mm]	73.0	38.0	37.0
Dps' [mm]	60.0	31.0	35.0
Force [kN]	0.9	0.15	0.17
Equivalent Diameter [mm]	86.1	49.9	44.3
Point Load Strength Index, Is [MPa]	0.1	0.1	0.1
Point Load Strength Index, Is(50) [MPa]	0.2	0.1	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.60
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.60	21.60	21.60
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln [mm]	47.0	-	49.0
Width [mm]	100.0	100.0	66.0
Dps [mm]	100.0	60.0	63.0
Dps' [mm]	94.0	50.0	56.0
Force [kN]	6.11	5.03	2.65
Equivalent Diameter [mm]	97.0	79.8	68.6
Point Load Strength Index, Is [MPa]	0.7	0.8	0.6
Point Load Strength Index, Is(50) [MPa]	0.9	1	0.7
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	05/01/2023	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.89
		Sample Type	C
		Sample Reference	10

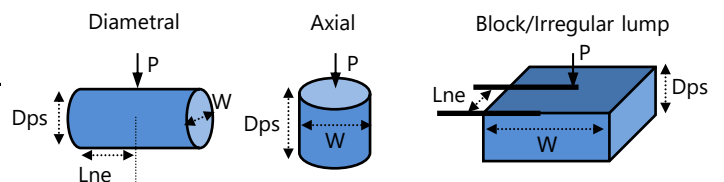
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.89	22.89	22.89
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	81.0	-	47.0
Width [mm]	101.0	100.0	86.0
Dps [mm]	101.0	87.0	57.0
Dps' [mm]	87.0	60.0	49.0
Force [kN]	5.53	5.26	3.08
Equivalent Diameter [mm]	93.7	87.4	73.2
Point Load Strength Index, Is [MPa]	0.6	0.7	0.6
Point Load Strength Index, Is(50) [MPa]	0.8	0.9	0.7
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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1483

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.09
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	17.09	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	90.0	-	-
Dps [mm]	64.0	-	-
Dps' [mm]	48.0	-	-
Force [kN]	5.1	-	-
Equivalent Diameter [mm]	74.2	-	-
Point Load Strength Index, I _s [MPa]	0.9	-	-
Point Load Strength Index, I _s (50) [MPa]	1.1	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.09
		Sample Type	C
		Sample Reference	3

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	18.09	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	101.0	-	-
Dps [mm]	68.0	-	-
Dps' [mm]	61.0	-	-
Force [kN]	6.26	-	-
Equivalent Diameter [mm]	88.6	-	-
Point Load Strength Index, I _s [MPa]	0.8	-	-
Point Load Strength Index, I _s (50) [MPa]	1	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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1483

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.91
		Sample Type	C
		Sample Reference	5

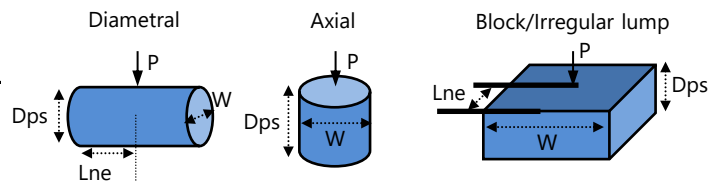
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.91	20.91	20.91
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	76.0	-	50.0
Width [mm]	102.0	102.0	86.0
Dps [mm]	102.0	89.0	60.0
Dps' [mm]	96.0	76.0	53.0
Force [kN]	2.38	9.81	4.45
Equivalent Diameter [mm]	99.0	99.3	76.2
Point Load Strength Index, Is [MPa]	0.2	1	0.8
Point Load Strength Index, Is(50) [MPa]	0.3	1.4	0.9
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.70
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.70	21.70	21.70
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	80.0	-	50.0
Width [mm]	100.0	100.0	98.0
Dps [mm]	100.0	80.0	30.0
Dps' [mm]	77.0	66.0	21.0
Force [kN]	1.43	2.35	1.52
Equivalent Diameter [mm]	87.7	91.7	51.2
Point Load Strength Index, I _s [MPa]	0.2	0.3	0.6
Point Load Strength Index, I _s (50) [MPa]	0.2	0.4	0.6
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.14
		Sample Type	C
		Sample Reference	13

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	23.14	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	102.0	-	-
Dps [mm]	59.0	-	-
Dps' [mm]	45.0	-	-
Force [kN]	1.09	-	-
Equivalent Diameter [mm]	76.4	-	-
Point Load Strength Index, I _s [MPa]	0.2	-	-
Point Load Strength Index, I _s (50) [MPa]	0.2	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.39
		Sample Type	C
		Sample Reference	15

Test Data			
Specimen Reference	1	2	-
Specimen Depth [m]	24.39	24.39	-
Test Type	Diametral	Axial	-
Test Direction	U	U	-
Lne [mm]	96.0	-	-
Width [mm]	101.0	102.0	-
Dps [mm]	101.0	90.0	-
Dps' [mm]	94.0	67.0	-
Force [kN]	4.41	12.44	-
Equivalent Diameter [mm]	97.4	93.3	-
Point Load Strength Index, Is [MPa]	0.5	1.4	-
Point Load Strength Index, Is(50) [MPa]	0.6	1.9	-
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.58
		Sample Type	C
		Sample Reference	16

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.58	24.58	24.58
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	60.0	-	50.0
Width [mm]	101.0	101.0	58.0
Dps [mm]	101.0	79.0	32.0
Dps' [mm]	97.0	71.0	22.0
Force [kN]	2.04	2.87	1.06
Equivalent Diameter [mm]	99.0	95.6	40.3
Point Load Strength Index, Is [MPa]	0.2	0.3	0.7
Point Load Strength Index, Is(50) [MPa]	0.3	0.4	0.6
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.38
		Sample Type	C
		Sample Reference	2

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	18.38	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	98.0	-	-
Dps [mm]	33.0	-	-
Dps' [mm]	22.0	-	-
Force [kN]	4.46	-	-
Equivalent Diameter [mm]	52.4	-	-
Point Load Strength Index, I _s [MPa]	1.6	-	-
Point Load Strength Index, I _s (50) [MPa]	1.7	-	-
Specimen Description	Grey MUDSTONE		
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.36
		Sample Type	C
		Sample Reference	6

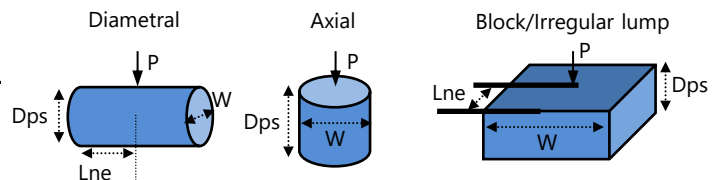
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.36	20.36	20.36
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	79.0	-	48.0
Width [mm]	98.0	98.0	89.0
Dps [mm]	98.0	86.0	59.0
Dps' [mm]	91.0	65.0	51.0
Force [kN]	4.93	12.05	1.86
Equivalent Diameter [mm]	94.4	90.1	76.0
Point Load Strength Index, Is [MPa]	0.6	1.5	0.3
Point Load Strength Index, Is(50) [MPa]	0.7	1.9	0.4
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.45
		Sample Type	C
		Sample Reference	9

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.45	21.45	21.45
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	58.0	-	31.0
Width [mm]	101.0	101.0	72.0
Dps [mm]	101.0	96.0	33.0
Dps' [mm]	96.0	76.0	30.0
Force [kN]	7.48	23.69	1.55
Equivalent Diameter [mm]	98.5	98.9	52.4
Point Load Strength Index, I _s [MPa]	0.8	2.4	0.6
Point Load Strength Index, I _s (50) [MPa]	1.1	3.3	0.6
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	05/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.79
		Sample Type	C
		Sample Reference	12

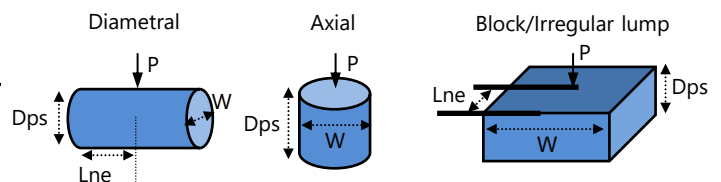
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	22.79	22.79	22.79
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	39.0	40.0
Width [mm]	100.0	87.0	59.0
Dps [mm]	82.0	52.0	36.0
Dps' [mm]	72.0	39.0	31.0
Force [kN]	7.45	3.13	0.96
Equivalent Diameter [mm]	95.7	65.7	48.3
Point Load Strength Index, I _s [MPa]	0.8	0.7	0.4
Point Load Strength Index, I _s (50) [MPa]	1.1	0.8	0.4
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Ln_e - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.98
		Sample Type	C
		Sample Reference	13

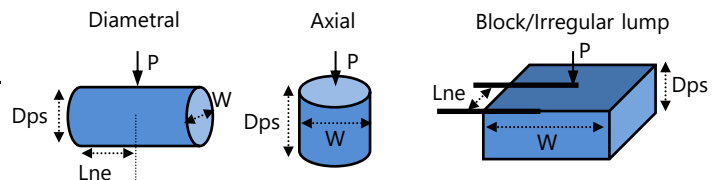
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	23.98	23.98	23.98
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	60.0	-	48.0
Width [mm]	100.0	100.0	76.0
Dps [mm]	100.0	75.0	55.0
Dps' [mm]	97.0	58.0	42.0
Force [kN]	0.51	4.66	0.48
Equivalent Diameter [mm]	98.5	85.9	63.8
Point Load Strength Index, Is [MPa]	0.1	0.6	0.1
Point Load Strength Index, Is(50) [MPa]	0.1	0.8	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.25
		Sample Type	C
		Sample Reference	29

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	11.25	11.25	11.25
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	92.0	-	46.0
Width [mm]	99.0	99.0	64.0
Dps [mm]	99.0	73.0	51.0
Dps' [mm]	91.0	51.0	47.0
Force [kN]	11	7.89	2.47
Equivalent Diameter [mm]	94.9	80.2	61.9
Point Load Strength Index, Is [MPa]	1.2	1.2	0.6
Point Load Strength Index, Is(50) [MPa]	1.6	1.5	0.7
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	13.75
		Sample Type	C
		Sample Reference	33

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	13.75	13.75	13.75
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	53.0	-	44.0
Width [mm]	97.0	96.0	82.0
Dps [mm]	97.0	78.0	45.0
Dps' [mm]	94.0	62.0	39.0
Force [kN]	2.22	2.6	0.47
Equivalent Diameter [mm]	95.5	87.1	63.8
Point Load Strength Index, Is [MPa]	0.2	0.3	0.1
Point Load Strength Index, Is(50) [MPa]	0.3	0.4	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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LABORATORY TEST CERTIFICATE
Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.62
		Sample Type	C
		Sample Reference	36

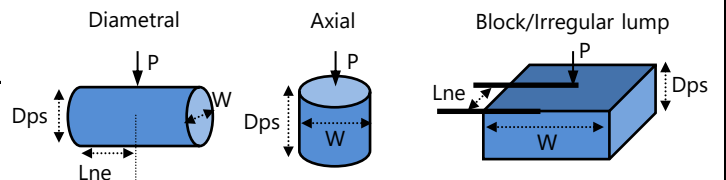
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	16.62	16.62	16.62
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	48.0	41.0
Width [mm]	97.0	53.0	49.0
Dps [mm]	59.0	48.0	48.0
Dps' [mm]	45.0	43.0	40.0
Force [kN]	0.34	0.03	0.74
Equivalent Diameter [mm]	74.5	53.9	50.0
Point Load Strength Index, I _s [MPa]	0.1	<0.1	0.3
Point Load Strength Index, I _s (50) [MPa]	0.1	<0.1	0.3
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Ln_e - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	21.90
		Sample Type	C
		Sample Reference	43

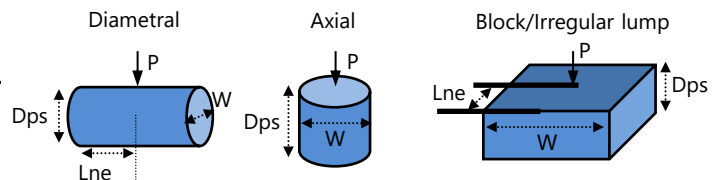
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	21.90	21.90	21.90
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	43.0	46.0
Width [mm]	99.0	53.0	47.0
Dps [mm]	88.0	36.0	36.0
Dps' [mm]	66.0	27.0	29.0
Force [kN]	5.54	0.7	0.54
Equivalent Diameter [mm]	91.2	42.7	41.7
Point Load Strength Index, Is [MPa]	0.7	0.4	0.3
Point Load Strength Index, Is(50) [MPa]	0.9	0.4	0.3
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Determination of Point Load Strength Index

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1483

Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.47
		Sample Type	C
		Sample Reference	44

Test Data			
Specimen Reference	1	-	-
Specimen Depth [m]	22.47	-	-
Test Type	Axial	-	-
Test Direction	U	-	-
Ln _e [mm]	-	-	-
Width [mm]	100.0	-	-
Dps [mm]	67.0	-	-
Dps' [mm]	50.0	-	-
Force [kN]	1.82	-	-
Equivalent Diameter [mm]	79.8	-	-
Point Load Strength Index, I _s [MPa]	0.3	-	-
Point Load Strength Index, I _s (50) [MPa]	0.4	-	-
Specimen Description	Brown MUDSTONE		
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	16/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	16/01/2023	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.13
		Sample Type	C
		Sample Reference	46

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.13	24.13	24.13
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	46.0	31.0
Width [mm]	99.0	47.0	45.0
Dps [mm]	80.0	30.0	30.0
Dps' [mm]	61.0	22.0	21.0
Force [kN]	10.76	4.13	2.75
Equivalent Diameter [mm]	87.7	36.3	34.7
Point Load Strength Index, I _s [MPa]	1.4	3.1	2.3
Point Load Strength Index, I _s (50) [MPa]	1.8	2.7	1.9
Specimen Description	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins	Grey MUDSTONE with gypsum veins
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	11.35
		Sample Type	C
		Sample Reference	1

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	11.35	11.35	11.35
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	46.0	44.0
Width [mm]	99.0	75.0	71.0
Dps [mm]	72.0	45.0	55.0
Dps' [mm]	62.0	43.0	50.0
Force [kN]	1.38	0.05	0.03
Equivalent Diameter [mm]	88.4	64.1	67.2
Point Load Strength Index, Is [MPa]	0.2	<0.1	<0.1
Point Load Strength Index, Is(50) [MPa]	0.2	<0.1	<0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.32
		Sample Type	C
		Sample Reference	5

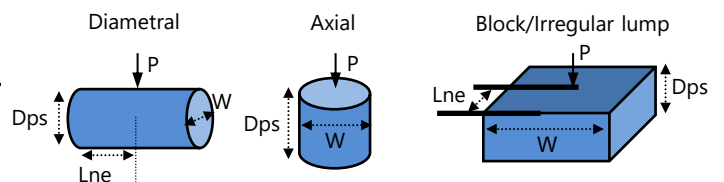
Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	15.32	15.32	15.32
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	66.0	-	49.0
Width [mm]	97.0	98.0	56.0
Dps [mm]	97.0	55.0	48.0
Dps' [mm]	92.0	41.0	26.0
Force [kN]	0.28	1.34	0.82
Equivalent Diameter [mm]	94.5	71.5	43.1
Point Load Strength Index, Is [MPa]	<0.1	0.3	0.4
Point Load Strength Index, Is(50) [MPa]	<0.1	0.3	0.4
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

Direction

L - Parallel to planes of weakness
P - Perpendicular to planes of weakness
U - Unknown or random

Dimensions

Dps - Distance between platens (platen separation)
Dps' - Distance between platens at failure
Lne - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.10
		Sample Type	C
		Sample Reference	8

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	17.10	17.10	17.10
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Ln _e [mm]	-	48.0	46.0
Width [mm]	98.0	75.0	46.0
Dps [mm]	92.0	63.0	40.0
Dps' [mm]	71.0	50.0	33.0
Force [kN]	2.25	0.55	0.4
Equivalent Diameter [mm]	94.1	69.1	44.0
Point Load Strength Index, I _s [MPa]	0.3	0.1	0.2
Point Load Strength Index, I _s (50) [MPa]	0.3	0.1	0.2
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Ln_e - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.94
		Sample Type	C
		Sample Reference	13

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	20.94	20.94	20.94
Test Type	Axial	Irregular Lump	Irregular Lump
Test Direction	U	U	U
Lne [mm]	-	46.0	48.0
Width [mm]	99.0	65.0	65.0
Dps [mm]	67.0	51.0	51.0
Dps' [mm]	60.0	42.0	44.0
Force [kN]	0.55	1.16	0.37
Equivalent Diameter [mm]	87.0	59.0	60.3
Point Load Strength Index, Is [MPa]	0.1	0.3	0.1
Point Load Strength Index, Is(50) [MPa]	0.1	0.4	0.1
Specimen Description	Brown MUDSTONE	Brown MUDSTONE	Brown MUDSTONE
Remarks			

<p>Direction</p> <p>L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions</p> <p>Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, $F = (De/50)0.45$ for all tests				

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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Determination of Point Load Strength Index



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Project Reference	F212561	Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.13
		Sample Type	C
		Sample Reference	16

Test Data			
Specimen Reference	1	2	3
Specimen Depth [m]	24.13	24.13	24.13
Test Type	Diametral	Axial	Irregular Lump
Test Direction	U	U	U
Lne [mm]	60.0	-	41.0
Width [mm]	101.0	100.0	58.0
Dps [mm]	101.0	63.0	57.0
Dps' [mm]	96.0	44.0	48.0
Force [kN]	0.06	17.37	6.49
Equivalent Diameter [mm]	98.5	74.8	59.5
Point Load Strength Index, Is [MPa]	<0.1	3.1	1.8
Point Load Strength Index, Is(50) [MPa]	<0.1	3.7	2
Specimen Description	Grey MUDSTONE	Grey MUDSTONE	Grey MUDSTONE
Remarks			

<p>Direction L - Parallel to planes of weakness P - Perpendicular to planes of weakness U - Unknown or random</p> <p>Dimensions Dps - Distance between platens (platen separation) Dps' - Distance between platens at failure Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P</p>					
Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:	Size factor, F = (De/50)0.45 for all tests				

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

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Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	15.00
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	18/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	13.6

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



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Project Reference	F212561	Location ID	MS-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.62
Specimen Description	Brown MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	8

Test Data	
Date of Test	18/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	17.1

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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Determination of Rock Water Content



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Project Reference	F212561	Location ID	MS-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.40
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	7.0

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

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Project Reference	F212561	Location ID	MS-BH02		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.69	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	3

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	11.2

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



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Project Reference	F212561	Location ID	MS-BH02		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	22.77	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	5

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	9.2

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



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Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.29
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	10.7

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH03
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.01
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	18/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	13.7

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH04
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.04
Specimen Description	White GYPSUM		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	48

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	18.8

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH04	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	37.13	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	66

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	9.5

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH05
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.35
Specimen Description	Brown MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	15.2

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH05	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	19.15	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	3

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.3

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.27
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	2

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	7.4

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH06
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.54
Specimen Description	Brown MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	12.9

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.00
Specimen Description	Brown MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	5

Test Data	
Date of Test	19/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	12.6

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH07
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.80
Specimen Description	Brown grey MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	7

Test Data	
Date of Test	20/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	9.2

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH08
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	White GYPSUM	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	23.2

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH08		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	19.08	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	4

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	8.6

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.89
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	5.7

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



ISRM : 2007, page 87

1483

Project Reference	F212561	Location ID	MS-BH09
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Brown MUDSTONE with gypsum veins		Sample Type
Specimen Reference		Specimen Depth [m]	Sample Reference
			5

Test Data	
Date of Test	17/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	12.9

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	25/11/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH09		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	25.10	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	9

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	13.8

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	14.90
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	36

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	17.6

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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Project Reference	F212561		Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	17.61
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	40

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	7.8

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH10
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.46
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	41

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	10.2

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022

Remarks:

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.56
Specimen Description	White GYPSUM	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	2

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	14.3

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Brown MUDSTONE		Sample Type
Specimen Reference		Specimen Depth [m]	Sample Reference
			9

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	8.9

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH11		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	20.83	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	10

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	3.8

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
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ISRM : 2007, page 87

1483

Project Reference	F212561	Location ID	MS-BH11
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.25
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	9.5

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	5.6

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH12		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	29.35	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	11

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	11.0

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH12		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	37.79	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	17

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	6.8

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH12
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	40.77
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	21

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	6.1

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.77
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	15.3

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	25.91
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	11

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	13.2

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH13	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	30.59	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	15

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.6

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	37.63
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	22

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.0

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH13
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	39.72
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	26

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.6

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

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1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH14
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	19.13
Specimen Description	Grey MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	2

Test Data	
Date of Test	24/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	12.2

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH14	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	24.53	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	7

Test Data	
Date of Test	25/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.0

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	08/11/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH15
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.48
Specimen Description	White GYPSUM	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	3

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	18.6

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH15		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.80	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	6

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	7.0

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	16.66
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	25/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	6.4

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH16
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.22
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	6

Test Data	
Date of Test	24/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	10.1

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	08/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

Project Reference	F212561	Location ID	MS-BH17
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	24.03
Specimen Description	Brown MUDSTONE with gypsum veins	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	9

Test Data	
Date of Test	22/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	14.5

Issue Date	05/01/2023	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	05/01/2023
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	
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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH18
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	14.15
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	45

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	23.4

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	17.10
Specimen Description	Grey MUDSTONE with gypsum veins		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	1

Test Data	
Date of Test	25/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	10.6

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	08/11/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH19
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	19.24
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	3

Test Data	
Date of Test	25/10/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.5

Issue Date	08/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	08/11/2022	

Remarks:

<p>Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW</p> <p>Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.</p>	
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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	18.76
Specimen Description	White GYPSUM	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	2

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	23.4

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE
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1483

Project Reference	F212561	Location ID	MS-BH20
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	22.40
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	4

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	15.3

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH20		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	24.48	
Specimen Description	Brown MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	7

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	10.3

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Grey MUDSTONE with gypsum veins		Sample Type
Specimen Reference		Specimen Depth [m]	Sample Reference
			10

Test Data	
Date of Test	10/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	8.2

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
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LABORATORY TEST CERTIFICATE
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ISRM : 2007, page 87

1483

Project Reference	F212561	Location ID	MS-BH21
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Brown MUDSTONE with gypsum veins		Sample Type
Specimen Reference		Specimen Depth [m]	Sample Reference
			13

Test Data	
Date of Test	11/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	19.3

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH22
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]
Specimen Description	Brown MUDSTONE		Sample Type
Specimen Reference		Specimen Depth [m]	Sample Reference
			1

Test Data	
Date of Test	14/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	10.0

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
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1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH22		
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	22.25	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	5

Test Data	
Date of Test	15/11/2022
Oven Temperature [°C]	105.0
Water Content [%]	4.7

Issue Date	25/11/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	25/11/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
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LABORATORY TEST CERTIFICATE
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1483

Project Reference	F212561		Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.06
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	3

Test Data	
Date of Test	09/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	10.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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Project Reference	F212561		Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	19.80
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	6

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.5

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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Project Reference	F212561		Location ID	MS-BH23
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	21.60
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	8

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	5.4

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	17.09
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	1

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	9.4

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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1483

Project Reference	F212561		Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.09
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	3

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.2

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

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LABORATORY TEST CERTIFICATE
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1483

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Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	20.91
Specimen Description	Grey MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	5

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	4.7

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW	
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.	

LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	21.70
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	9

Test Data	
Date of Test	06/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.1

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE

Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561	Location ID	MS-BH24
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation	Depth Top [m]	23.14
Specimen Description	Brown MUDSTONE	Sample Type	C
Specimen Reference		Specimen Depth [m]	
		Sample Reference	13

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	16.9

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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1483

Project Reference	F212561		Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	18.38
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	2

Test Data	
Date of Test	09/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	7.4

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH25	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	20.36	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	6

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.8

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH25	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	21.45	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	9

Test Data	
Date of Test	07/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	6.5

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	MS-BH25	
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	22.79	
Specimen Description	Grey MUDSTONE		Sample Type	C	
Specimen Reference		Specimen Depth [m]		Sample Reference	12

Test Data	
Date of Test	08/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.5

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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1483

Project Reference	F212561		Location ID	MS-BH25
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	23.98
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	13

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	15.0

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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1483

Project Reference	F212561		Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	11.25
Specimen Description	Grey MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	29

Test Data	
Date of Test	09/12/2022
Oven Temperature [°C]	105.0
Water Content [%]	7.7

Issue Date	16/12/2022	Certificate Reference		Authorised by	huntc
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

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1483

Project Reference	F212561		Location ID	AR-BH01
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	13.75
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	33

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.9

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	11.35
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	1

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.0

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	15.32
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	5

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	14.9

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	

Remarks:

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW		
Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.		

LABORATORY TEST CERTIFICATE
Determination of Rock Water Content

ISRM : 2007, page 87



1483

Project Reference	F212561		Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	17.10
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	8

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	9.2

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)			Authorised Date	12/12/2022
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



LABORATORY TEST CERTIFICATE
Determination of Rock Water Content



1483

ISRM : 2007, page 87

Project Reference	F212561		Location ID	AR-BH02
Project Name	Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation		Depth Top [m]	20.94
Specimen Description	Brown MUDSTONE		Sample Type	C
Specimen Reference		Specimen Depth [m]	Sample Reference	13

Test Data	
Date of Test	05/12/2022
Oven Temperature [°C]	108.0
Water Content [%]	11.2

Issue Date	12/12/2022	Certificate Reference		Authorised by	alcocka
Client	SSE Generation Limited (SSE)		Authorised Date	12/12/2022	
Remarks:					

Fugro GeoServices Ltd. Unit 43, Number One Industrial Estate, Medomsley Road, Consett, DH8 6TW

Testing was performed at the Fugro GeoServices Ltd laboratory at the address shown above. Results relate only to the sample tested, having been authorised by persons qualified to do so. Opinions and interpretations are outside the scope of accreditation. Unless stated otherwise the sample was tested in the condition it was received at the laboratory.



K.4.2 Subcontractor Laboratory Results

Title	Reference
Classification	Referenced by Location ID
Particle Size Distribution	
Compaction-Related	Referenced by Location ID
Dry density/moisture content relationship 2.5kg rammer	
Compressibility and Permeability	Referenced by Location ID
One-dimensional consolidation properties	

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Certificate No : 22/1350 - 01-1
To : Andrew Alcock
Client : Fugro Geoservices Limited
Armstrong House, Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

LABORATORY TESTING OF SOIL

Introduction

We refer to samples taken from Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation and delivered to our laboratory on 12th December 2022.

Material & Source

Sample Reference : See Report Plates
Sampled By : Client
Sampling Certificate : Not Supplied
Location : See Report Plates
Description : See Page 2
Date Sampled : Not Supplied
Date Tested : 12th December 2022 Onwards
Source : F212561 - Keadby 3 Low Carbon Gas Power Station Project – Ground Investigation

Test Results

As Detailed On Page 2 to Page 6 inclusive

Comments

The results contained in this report relate to the sample(s) as received
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks

Approved for Issue

T McLelland (Director)

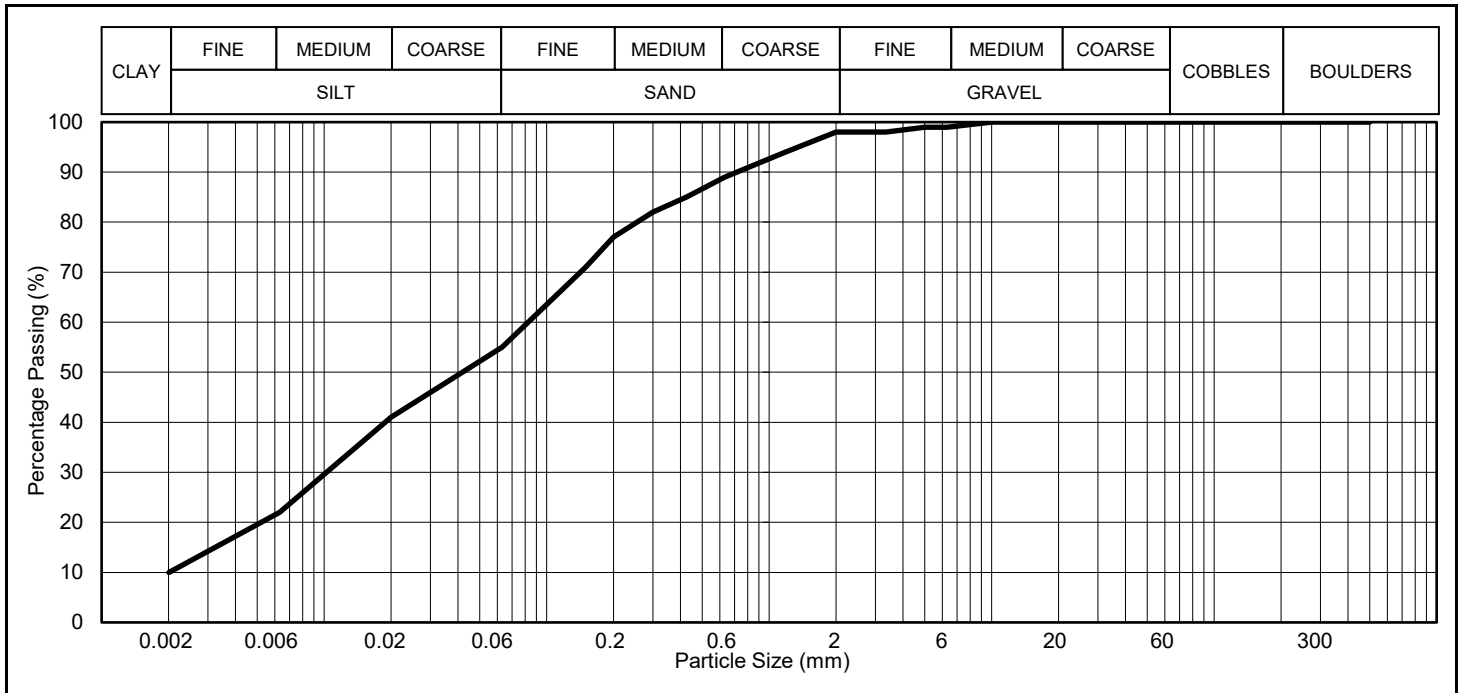
Date 09/01/2023



BOREHOLE	SAMPLE	DEPTH (m)	SAMPLE DESCRIPTION
DS101	B3	0.10-0.40	Brown / grey slightly gravelly clayey very sandy SILT with root fibres. Gravel is fine to medium.
MS-BH12	B6	0.50-0.80	Brown very sandy silty CLAY with black staining.

SUMMARY OF SAMPLE DESCRIPTIONS

Borehole	DS101
Sample	B3
Depth (m)	0.10-0.40



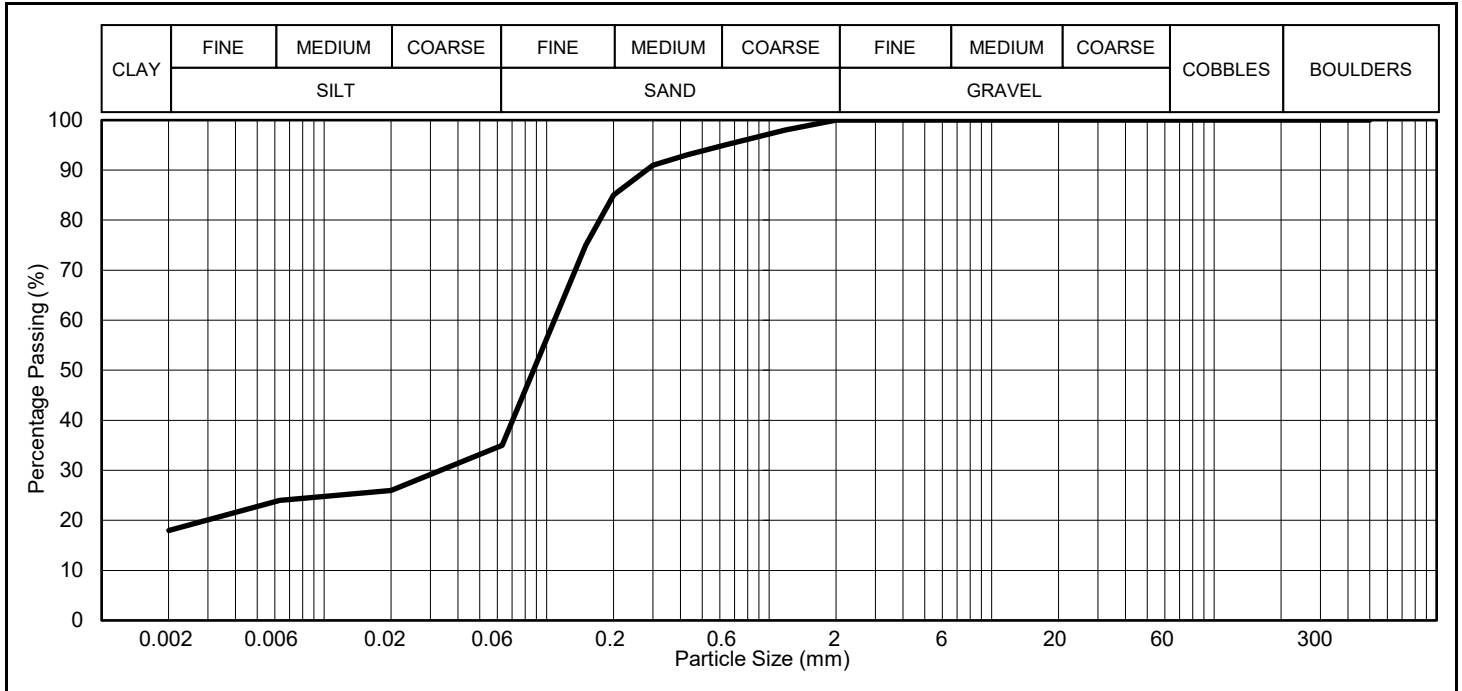
SIEVING				SEDIMENTATION					
Sieve Size (mm)	Percentage Passing (%)	Specification		Particle Size (mm)	Percentage Passing (%)				
		Not Applicable							
		Lower %	Upper %						
500.0	100	-	-	0.0200	41				
300.0	100	-	-	0.0063	22				
125.0	100	-	-	0.0020	10				
90.0	100	-	-	GRADING CLASSIFICATION (SHW TABLE 6/2) -					
75.0	100	-	-						
63.0	100	-	-						
50.0	100	-	-						
37.5	100	-	-						
28.0	100	-	-						
20.0	100	-	-						
14.0	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.					
10.0	100	-	-	PERCENTAGE SOIL TYPES					
6.3	99	-	-	CLAY	SILT †	SAND	GRAVEL	COBBLES	
5.0	99	-	-	10	45	43	2	0	
3.350	98	-	-	UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)					
2.000	98	-	-						
1.180	94	-	-						
0.630	89	-	-						
0.425	85	-	-						
0.300	82	-	-	D10	D60		Specification		
0.200	77	-	-	-	-				
0.150	71	-	-	UNIFORMITY COEFFICIENT					
0.063	55	-	-	-					

Remarks

† Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Assumed Particle Density of 2.65Mg/m³ was used in the relevant calculations.

Borehole	MS-BH12
Sample	B6
Depth (m)	0.50-0.80

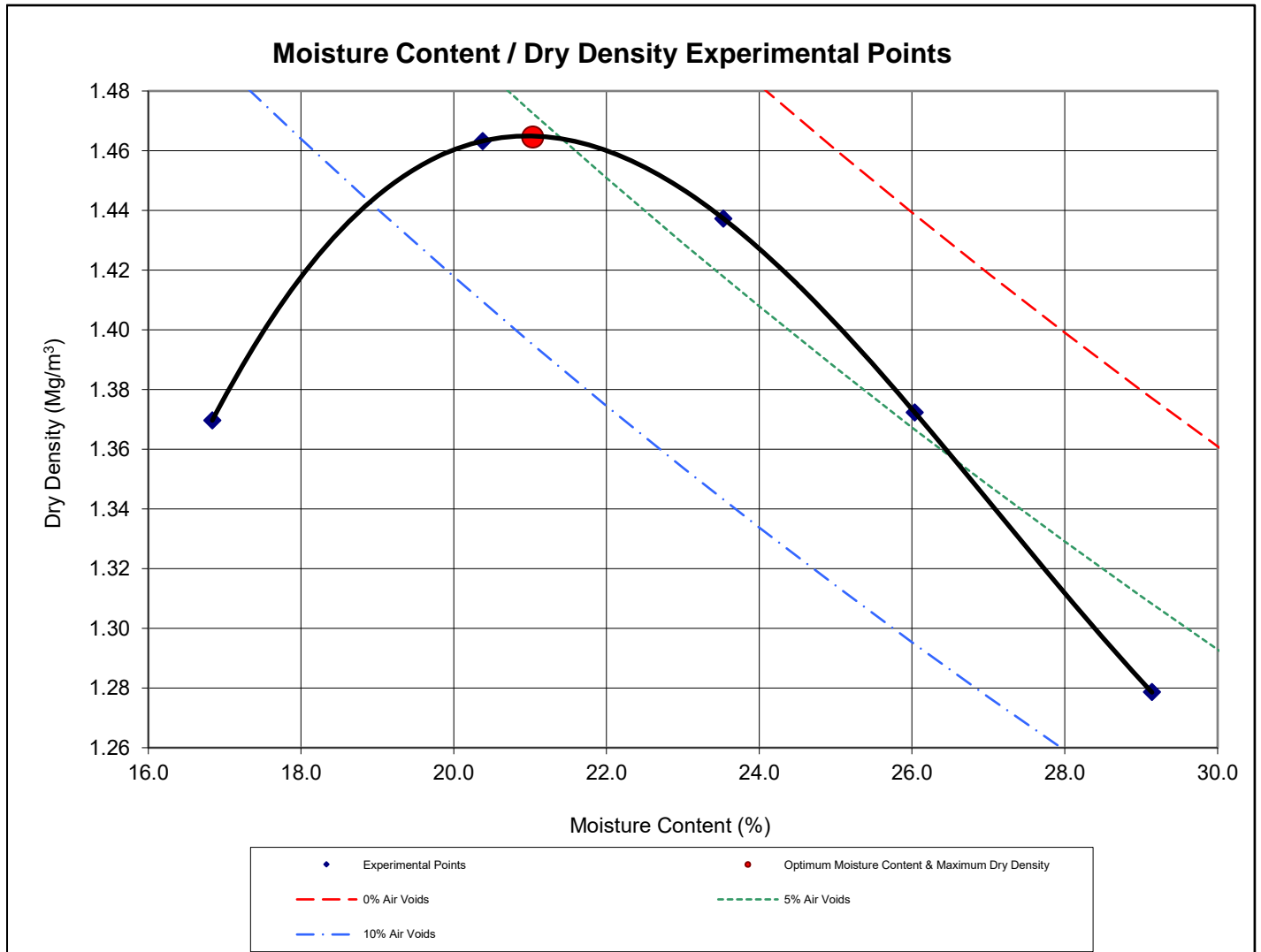


SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification		Particle Size (mm)	Percentage Passing (%)
		Not Applicable			
		Lower %	Upper %		
500.0	100	-	-	0.0200	26
300.0	100	-	-	0.0063	24
125.0	100	-	-	0.0020	18
90.0	100	-	-	GRADING CLASSIFICATION (SHW TABLE 6/2) -	
75.0	100	-	-		
63.0	100	-	-		
50.0	100	-	-		
37.5	100	-	-		
28.0	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-		
6.3	100	-	-		
PERCENTAGE SOIL TYPES					
5.0	100	-	-	CLAY	SILT †
3.350	100	-	-	18	17
2.000	100	-	-	SAND	GRAVEL
1.180	98	-	-	65	0
0.630	95	-	-	COBBLES	0
0.425	93	-	-	UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)	
0.300	91	-	-	D10	D60
0.200	85	-	-	-	-
0.150	75	-	-	UNIFORMITY COEFFICIENT	
0.063	35	-	-	-	-

Remarks

† Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

Assumed Particle Density of 2.65Mg/m3 was used in the relevant calculations.



Test Method : Clause 3.3: 2.5kg rammer, 3 layers, 27 blows/layer
Preparation Method : Separate samples
% Passing 37.5mm : 100
% Passing 20mm : 100
Grading Zone : 1
Particle Density : 2.30 Mg/m³ (Assumed)

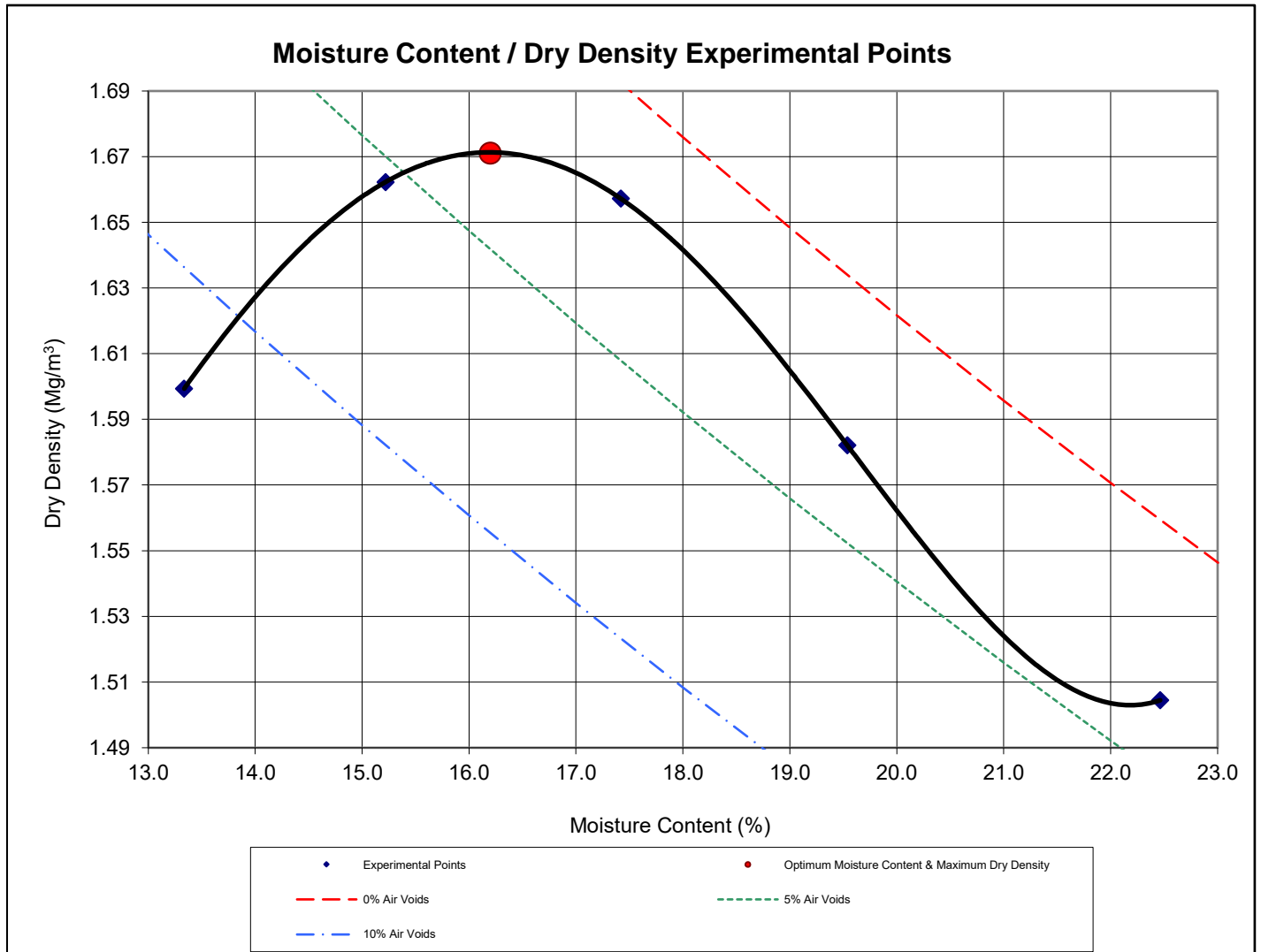
Experimental Points	
Moisture Content (%)	Dry Density (Mg/m ³)
16.8	1.37
20.4	1.46
23.5	1.44
26.0	1.37
29.1	1.28

Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
21.0	1.46
Remarks	

Borehole :	DS101
Sample :	B3
Depth (m) :	0.10-0.40

Tested in accordance with BS 1377 : Part 4 : 1990

DETERMINATION OF MOISTURE CONTENT / DRY DENSITY RELATIONSHIP BY COMPACTION



Test Method : Clause 3.3: 2.5kg rammer, 3 layers, 27 blows/layer
Preparation Method : Separate samples
% Passing 37.5mm : 100
% Passing 20mm : 100
Grading Zone : 1
Particle Density : 2.40 Mg/m³ (Assumed)

Experimental Points	
Moisture Content (%)	Dry Density (Mg/m ³)
13.3	1.60
15.2	1.66
17.4	1.66
19.5	1.58
22.5	1.50

Optimum Moisture Content (%)	Maximum Dry Density (Mg/m ³)
16.2	1.67
Remarks	

Borehole :	MS-BH12
Sample :	B6
Depth (m) :	0.50-0.80


Tested in accordance with BS 1377 : Part 4 : 1990

DETERMINATION OF MOISTURE CONTENT / DRY DENSITY RELATIONSHIP BY COMPACTION

Fugro GeoServices Ltd
Armstrong House
Unit 43 No 1 Industrial Estate
Medomsley Road
Consett
DH8 6TW
For the attention of Andrew Alcock

Report No: C7919
Issue No 2

LABORATORY TEST REPORT

Project Name	KEADBY 3 LOW CARBON GAS POWER STATION PROJECT - GROUND INVESTIGATION		
Project Number	C7919	Date samples received	12/12/2022
Your Ref	F212561	Date written instructions received	12/12/2022
Purchase Order	F212561	Date testing commenced	13/12/2022
Please find enclosed the results as summarised below			
Item No	Test Quantity	Description	ISO 17025 Accredited
2.61	2	Wet sieve analysis	Yes
2.63	2	Pipette sedimentation	Yes
4.13	2	Compaction 4.5kg rammer method (1 litre mould)	Yes
Remarks :			
Issued by :	J Hopkins	Date of Issue :	20/12/2022
Approved Signatories :	 20/12/2022	Key to symbols used in this report S/C : Testing was sub-contracted	
J.Hopkins (Laboratory Coordinator), M.D Brown (Senior Quality Manager), R Norris (Supervisor)			
<p>Unless we are notified to the contrary, samples will be disposed after a period of one month from this date. The results reported relate to samples received in the laboratory only. All results contained in this report are provisional unless signed by an approved signatory This report should not be reproduced except in full without the written approval of the laboratory. Under multisite accreditation the testing contained in this report may have been performed at another Terra Tek laboratory.</p> <p>Only those results indicated in this report are UKAS accredited and any opinions or interpretations expressed are outside the scope of UKAS accreditation.</p> <p>Feedback on the this report may be left via our website terratek.co.uk/feedback</p>			



College Road North, Aston Clinton, Bucks, HP22 5EZ



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Offices in Airdrie, Birmingham, Belfast and Aston Clinton



SITE INVESTIGATION AND LABORATORY SERVICES

Site	KEADBY 3 LOW CARBON GAS POWER STATION PROJECT - GROUND INVESTIGATION
Client	SSE Generation Limited
Engineer	

Contract No	F212561
Hole	BH103
Sample Ref	5
Depth (m)	0.40
Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	96
2.00 mm	94
1.18 mm	93
630 µm	92
425 µm	90
300 µm	88
200 µm	83
150 µm	77
63 µm	60
20 µm	48
6 µm	16
2 µm	4

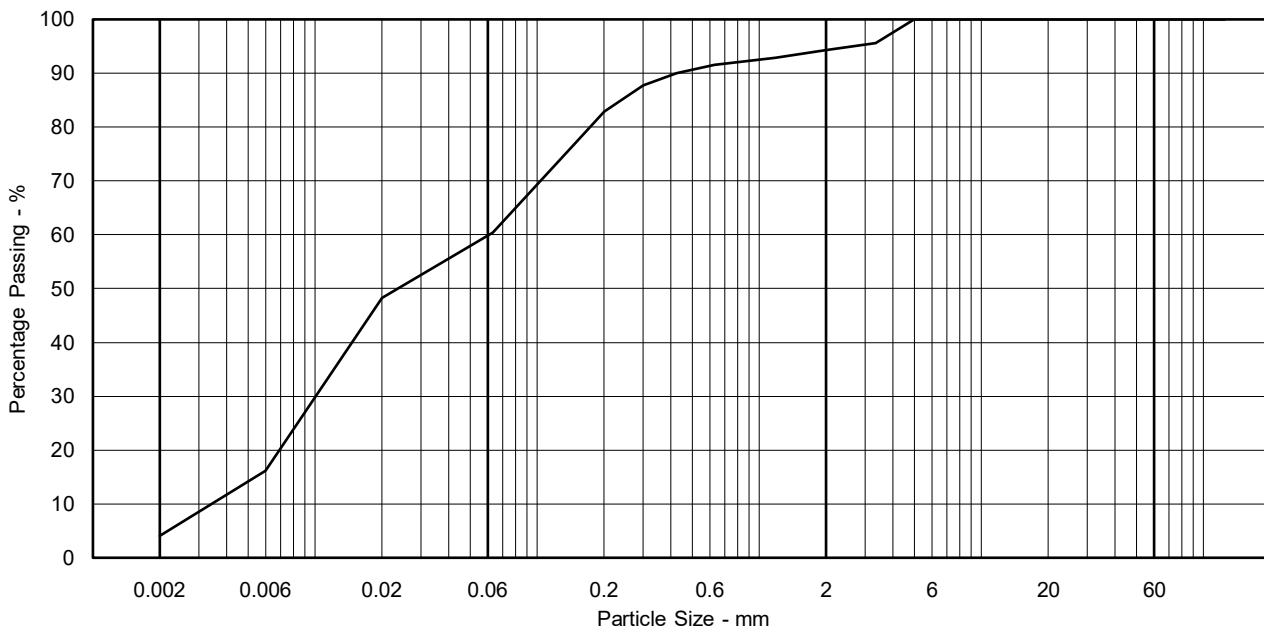
Non Engineering Description
Dark grey PFA.

Sample Proportions - %	
Cobbles	0.0
Gravel	5.8
Sand	34.7
Silt	55.5
Clay	4.1

Particle Diameter - mm	
D100	5.0
D60	0.061
D10	0.0034
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	17.9

Notes
Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
HW	[Redacted]
HW	20/12/2022

PARTICLE SIZE DISTRIBUTION
 BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method
 BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method





SITE INVESTIGATION AND LABORATORY SERVICES

Site	KEADBY 3 LOW CARBON GAS POWER STATION PROJECT - GROUND INVESTIGATION
Client	SSE Generation Limited
Engineer	

Contract No	F212561
Hole	BH103
Sample Ref	28
Depth (m)	9.00
Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	97
1.18 mm	96
630 µm	96
425 µm	94
300 µm	92
200 µm	88
150 µm	82
63 µm	67
20 µm	53
6 µm	18
2 µm	5

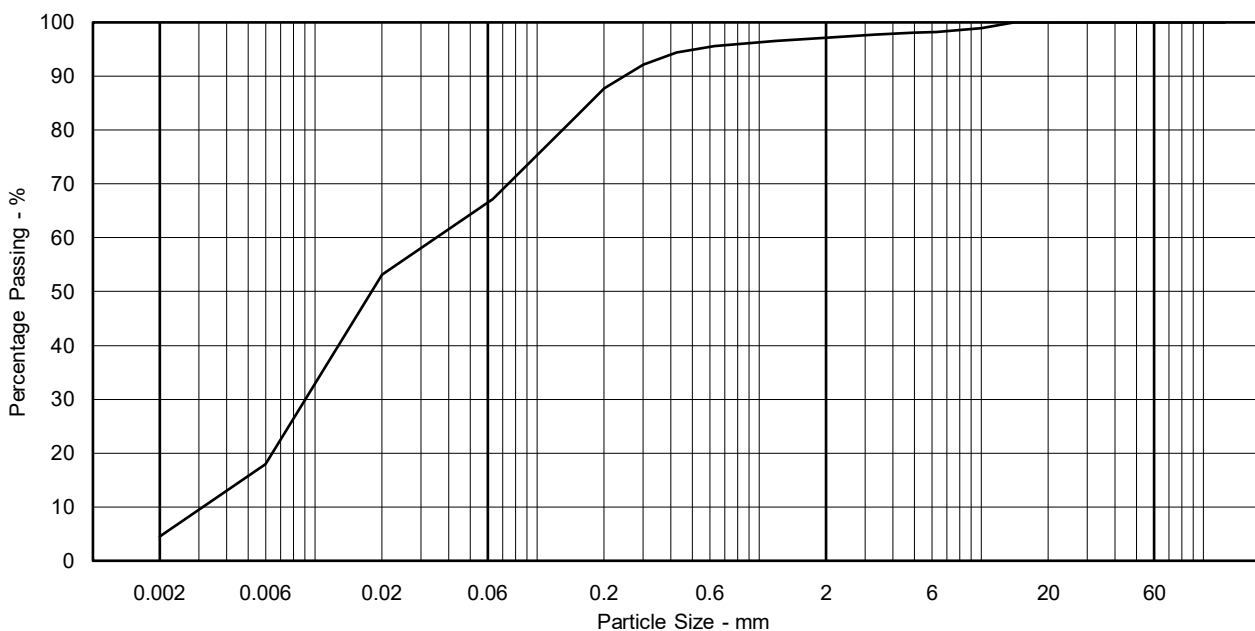
Non Engineering Description
Dark grey PFA.

Sample Proportions - %	
Cobbles	0.0
Gravel	2.8
Sand	30.9
Silt	61.7
Clay	4.5

Particle Diameter - mm	
D100	14
D60	0.035
D10	0.0031
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	11.3

Notes
Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
HW HW	 20/12/2022

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method
BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method



TERRA TEK

SITE INVESTIGATION AND LABORATORY SERVICES

Site KEADBY 3 LOW CARBON GAS POWER STATION
PROJECT - GROUND INVESTIGATION

Client SSE Generation Limited

Engineer

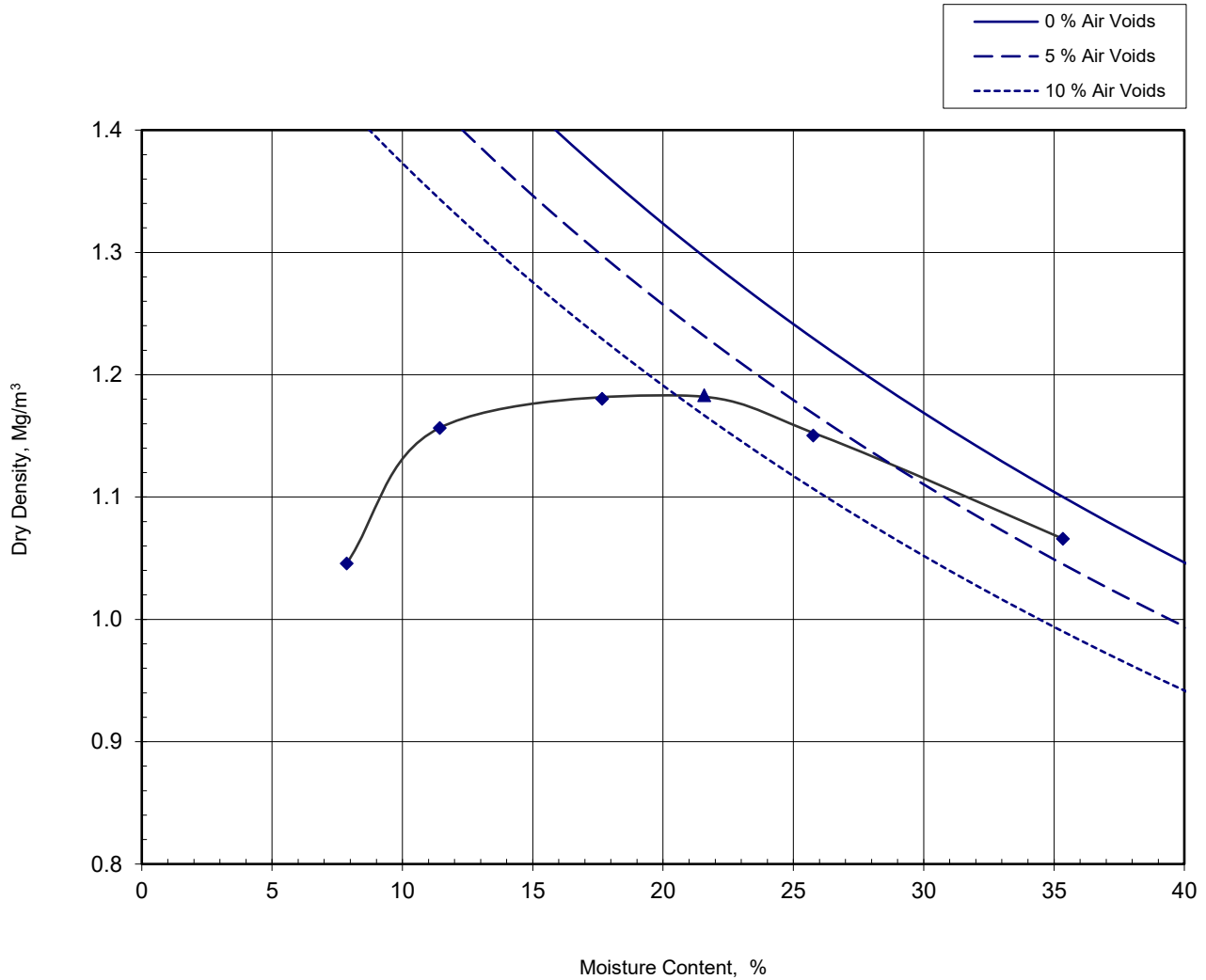
Contract No **F212561**

Hole BH103

Sample Ref 5

Depth (m) 0.40

Sample Type B



Non Engineering Description	Dark grey PFA.	
Preparation	Air dried	
Test Method	2.5kg Rammer for soils with particles up to medium-gravel size	
Samples Used	Separate	
Mass Retained on 37.5 mm Sieve	%	0
Mass Retained on 20.0 mm Sieve	%	0
Particle Density - Measured	Mg/m ³	1.80
Natural Moisture Content	%	15
Maximum Dry Density	Mg/m ³	1.18
Optimum Moisture Content	%	21.6

Originator

Checked &
Approved

JO

19/12/2022

Moisture Content / Dry Density Relationship

BS1377:Part 4:1990 Clause 3.3

TK

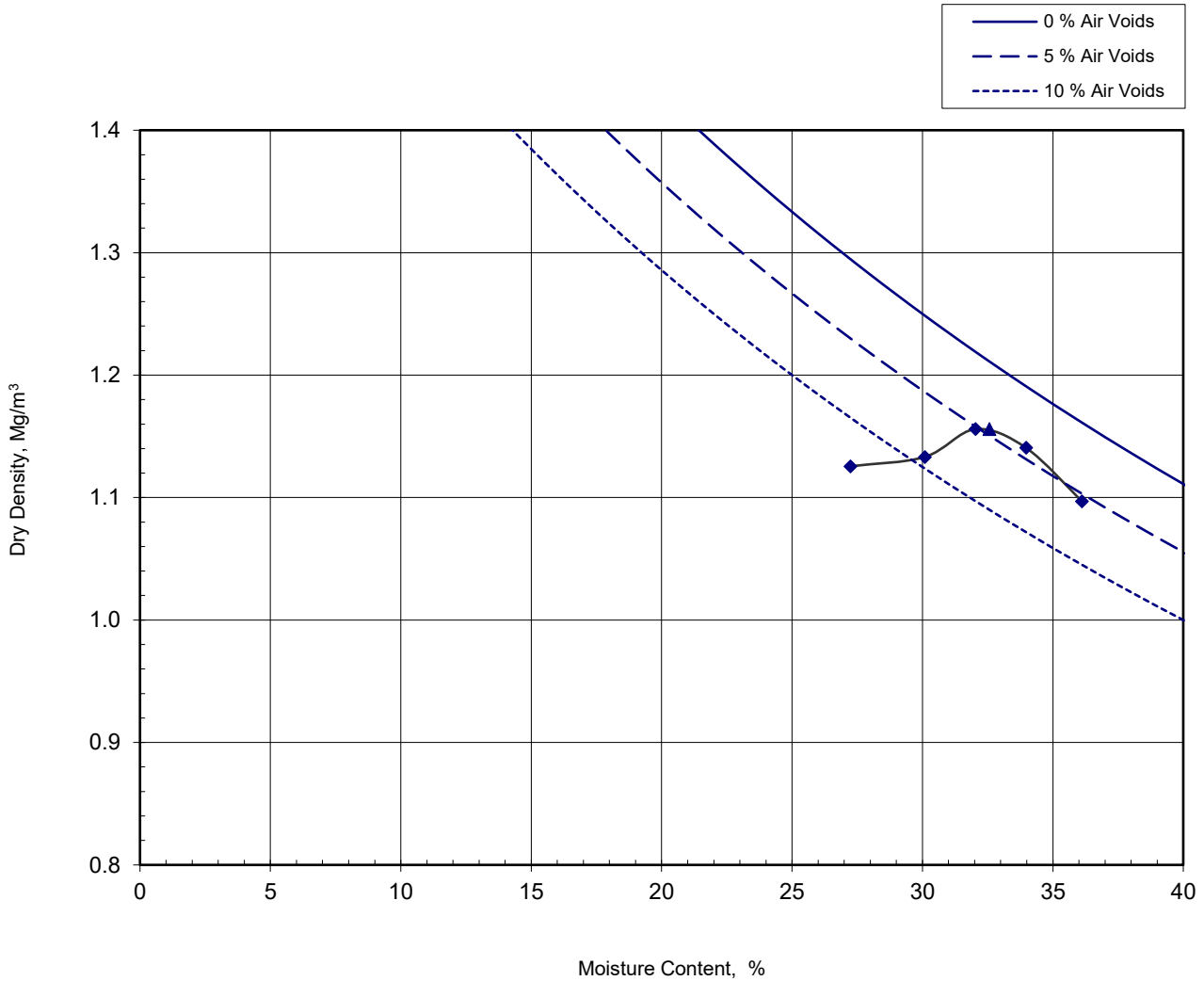
Sheet 1 of 1



SITE INVESTIGATION AND LABORATORY SERVICES

Site	KEADBY 3 LOW CARBON GAS POWER STATION PROJECT - GROUND INVESTIGATION
Client	SSE Generation Limited
Engineer	

Contract No	F212561
Hole	BH103
Sample Ref	28
Depth (m)	9.00
Sample Type	B



Non Engineering Description	Dark grey PFA.
Preparation	Air dried
Test Method	2.5kg Rammer for soils with particles up to medium-gravel size
Samples Used	Single
Mass Retained on 37.5 mm Sieve	0
Mass Retained on 20.0 mm Sieve	0
Particle Density - Assumed	2.00
Natural Moisture Content	34
Maximum Dry Density	1.16
Optimum Moisture Content	32.6

Originator	Checked & Approved	Moisture Content / Dry Density Relationship BS1377:Part 4:1990 Clause 3.3
AW	19/12/2022	





LABORATORY REPORT



4043

Contract Number: PSL22/7820

Report Date: 20 December 2022
Client's Reference: F212561
Client Name: Fugro Geoservices Ltd
Armstrong House, Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

For the attention of: Andrew Alcock

Contract Title: Keadby 3 Low Carbon Gas Power Station Project - Ground Investigation

Date Received: 8/12/2022
Date Commenced: 8/12/2022
Date Completed: 20/12/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

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S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

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Page 1 of

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[redacted]@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
MS-BH26	14	UT	3.80		Brown very sandy CLAY.
MS-BH26	16	UT	4.40		Brown clayey silty SAND.
MS-BH27	7	UT	1.20		Brown silty SAND.
MS-BH27	9	UT	1.80		Brown silty SAND.
MS-BH27	11	UT	2.60		Brown silty SAND.
MS-BH27	13	UT	3.20		Brown sandy CLAY.
MS-BH27	22	UT	5.90		Brown very sandy CLAY.



Keadby 3 Low Carbon Gas Power Station Project - Ground Investigation

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

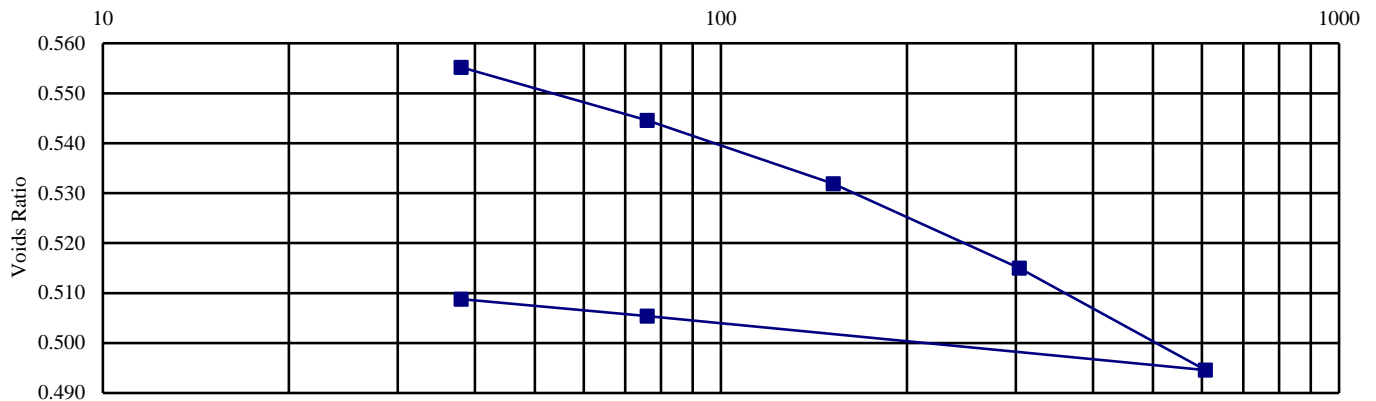
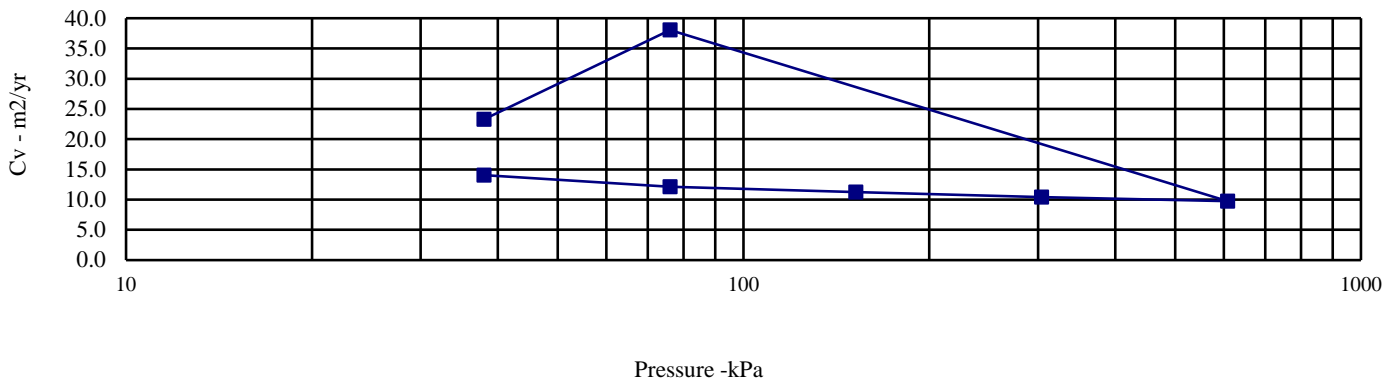
BS EN ISO 17892-5:2017

Hole Number: MS-BH26 **Top Depth (m):** 3.80

Sample Number: 14 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
Moisture Content (%):	22	kPa		m2/MN	m2/yr	within tube:	Vertical
Bulk Density (Mg/m3):	2.06	0	38	0.262	14.029	Method of	Trimmed from extruded material
Dry Density (Mg/m3):	1.69	38	76	0.179	12.145	preparation:	
Voids Ratio:	0.571	76	152	0.108	11.246	Method used to	T90
Degree of saturation:	103.4	152	304	0.072	10.438	determine CV:	
Height (mm):	20.008	304	608	0.044	9.751	Nominal temperature	20
Diameter (mm)	75.008	608	76	0.014	38.046	during test ' C:	
Particle Density (Mg/m3):	2.65	76	38	0.059	23.294	Remarks:	
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

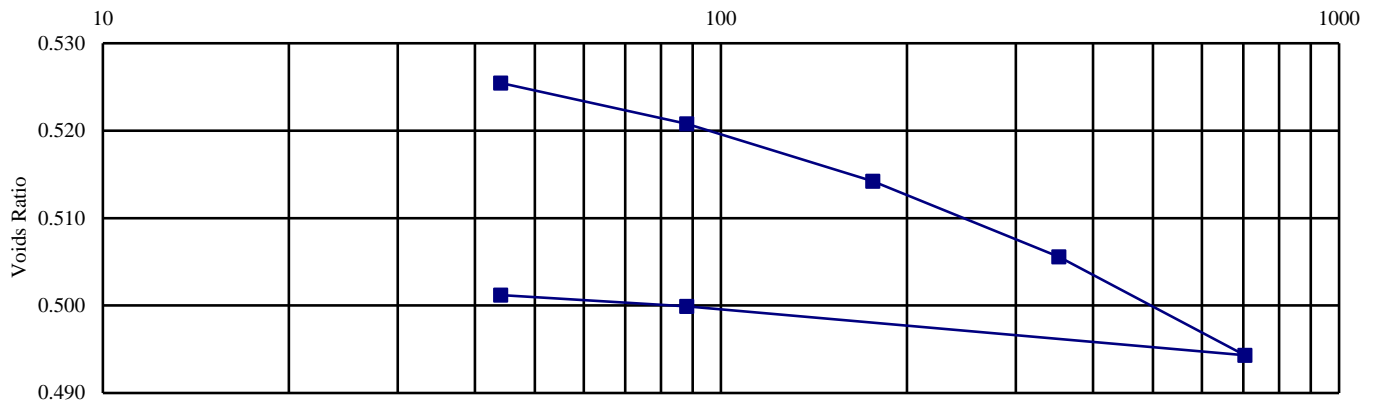
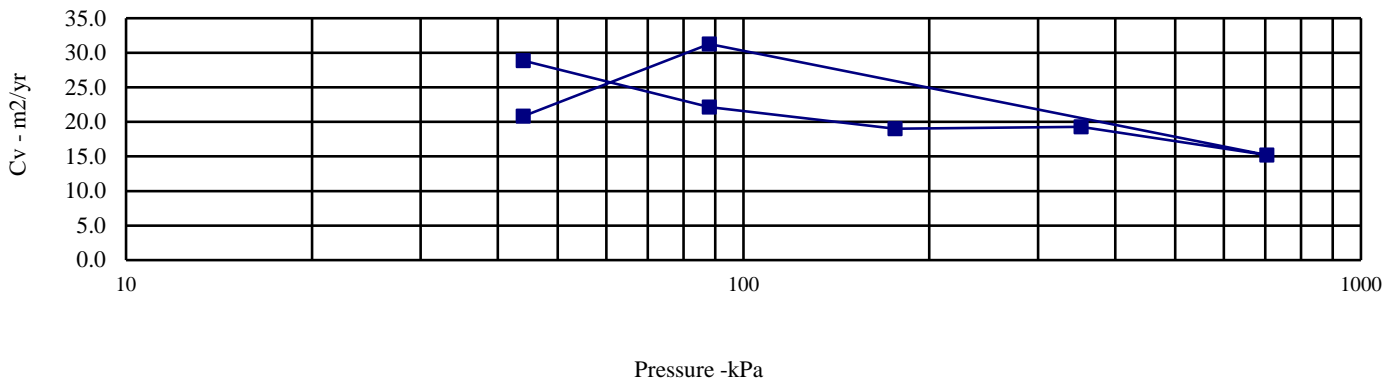
BS EN ISO 17892-5:2017

Hole Number: MS-BH26 **Top Depth (m):** 4.40

Sample Number: 16 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
		kPa		m2/MN	m2/yr	within tube:	Vertical
Moisture Content (%):	20	0	44	0.090	28.876	Method of preparation:	Trimmed from extruded material
Bulk Density (Mg/m3):	2.08	44	88	0.070	22.137	Method used to determine CV:	T90
Dry Density (Mg/m3):	1.73	88	176	0.049	19.025	Nominal temperature during test ' C:	20
Voids Ratio:	0.532	176	352	0.032	19.279	Remarks:	
Degree of saturation:	99.5	352	704	0.021	15.202		
Height (mm):	20.016	704	88	0.006	31.270		
Diameter (mm)	75.013	88	44	0.020	20.846		
Particle Density (Mg/m3):	2.65						
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

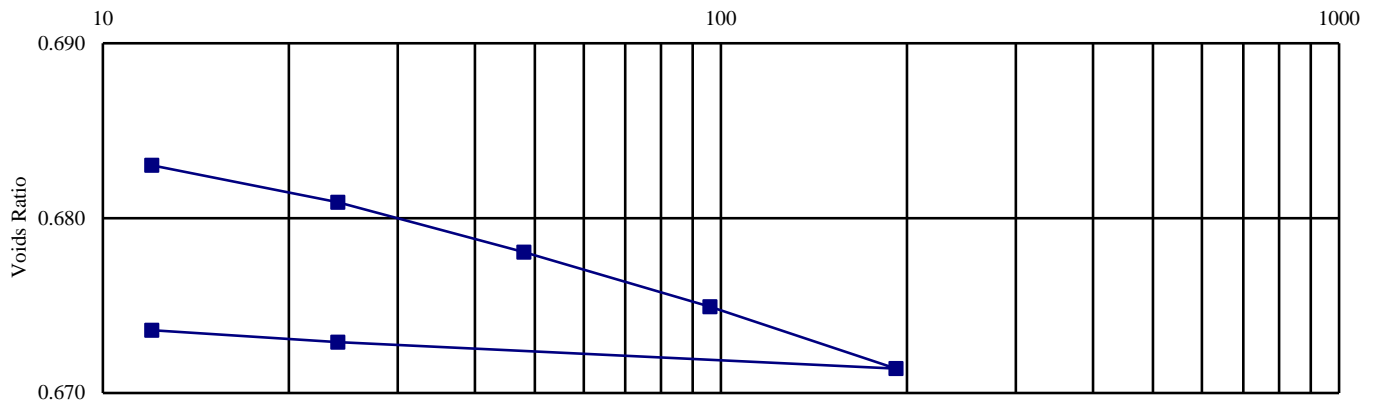
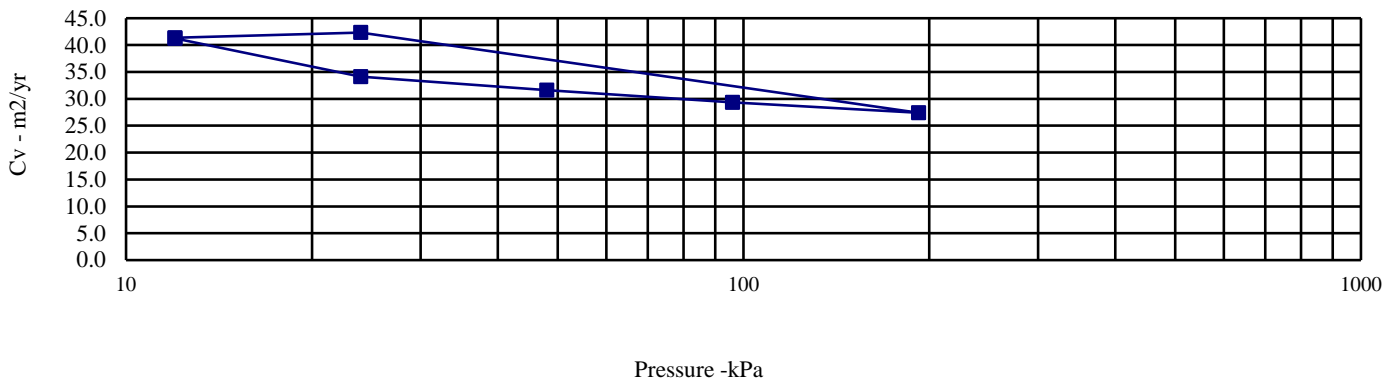
BS EN ISO 17892-5:2017

Hole Number: MS-BH27 **Top Depth (m):** 1.20

Sample Number: 7 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
Moisture Content (%):	23	kPa		m2/MN	m2/yr	within tube:	Vertical
Bulk Density (Mg/m3):	1.93	0	12	0.171	41.254	Method of preparation:	Trimmed from extruded material
Dry Density (Mg/m3):	1.57	12	24	0.104	34.111	Method used to determine CV:	T90
Voids Ratio:	0.686	24	48	0.071	31.644	Nominal temperature during test ' C:	20
Degree of saturation:	87.7	48	96	0.039	29.323	Remarks:	
Height (mm):	20.018	96	192	0.022	27.414		
Diameter (mm)	75.01	192	24	0.005	42.331		
Particle Density (Mg/m3):	2.65	24	12	0.034	41.385		
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

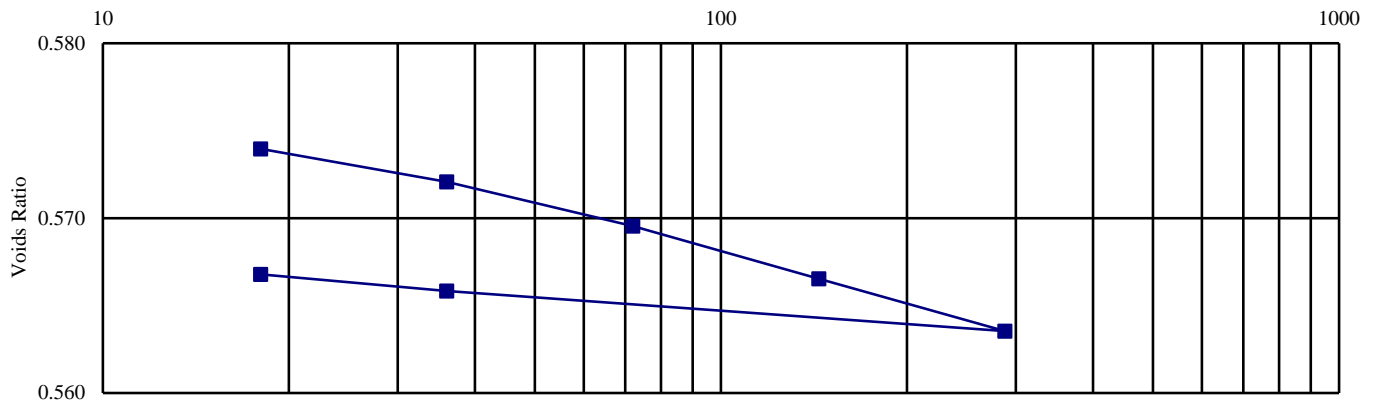
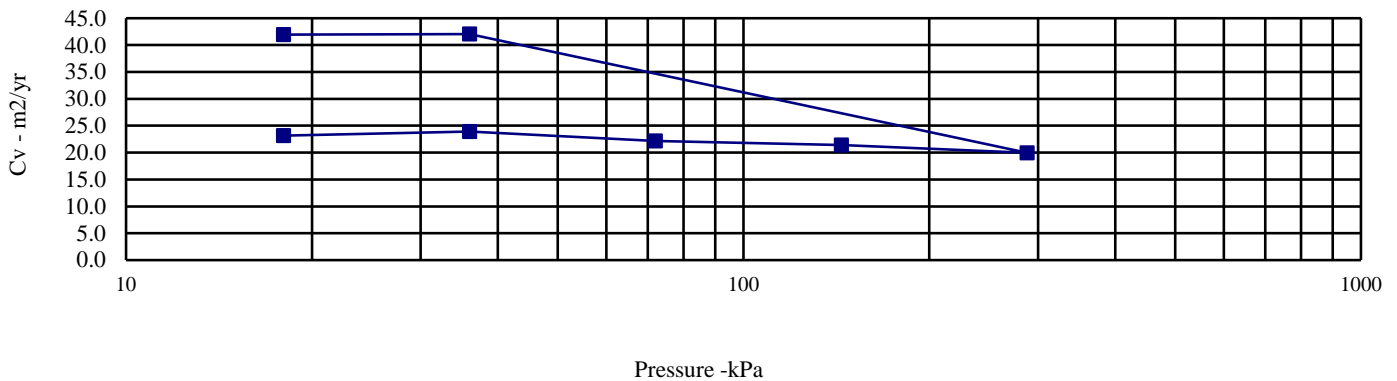
BS EN ISO 17892-5:2017

Hole Number: MS-BH27 **Top Depth (m):** 1.80

Sample Number: 9 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
		kPa		m2/MN	m2/yr	within tube:	Vertical
Moisture Content (%):	22	0	18	0.056	23.162	Method of preparation:	Trimmed from extruded material
Bulk Density (Mg/m3):	2.05	18	36	0.067	23.939	Method used to determine CV:	T90
Dry Density (Mg/m3):	1.68	36	72	0.045	22.163	Nominal temperature during test ' C:	20
Voids Ratio:	0.576	72	144	0.027	21.384	Remarks:	
Degree of saturation:	100.9	144	288	0.013	19.965		
Height (mm):	19.958	288	36	0.006	42.051		
Diameter (mm)	75.035	36	18	0.034	41.976		
Particle Density (Mg/m3):	2.65						
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

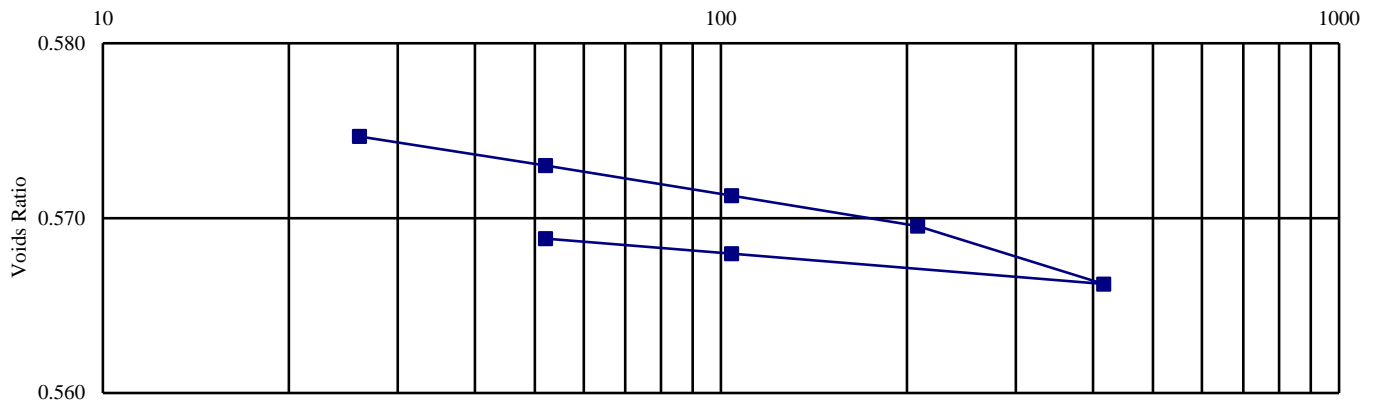
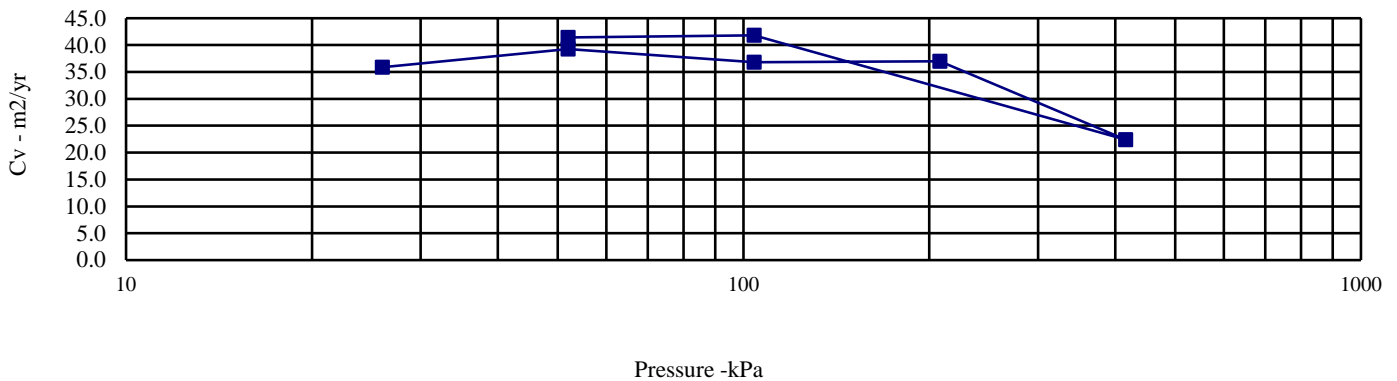
BS EN ISO 17892-5:2017

Hole Number: MS-BH27 **Top Depth (m):** 2.60

Sample Number: 11 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
Moisture Content (%):	21	kPa		m2/MN	m2/yr	within tube:	Vertical
Bulk Density (Mg/m3):	2.04	0	26	0.071	35.899	Method of preparation:	Trimmed from extruded material
Dry Density (Mg/m3):	1.68	26	52	0.040	39.257	Method used to determine CV:	T90
Voids Ratio:	0.578	52	104	0.021	36.820	Nominal temperature during test ' C:	20
Degree of saturation:	97.5	104	208	0.011	36.986	Remarks:	
Height (mm):	20.012	208	416	0.010	22.402		
Diameter (mm)	74.998	416	104	0.004	41.815		
Particle Density (Mg/m3):	2.65	104	52	0.011	41.411		
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

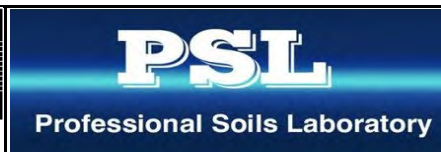
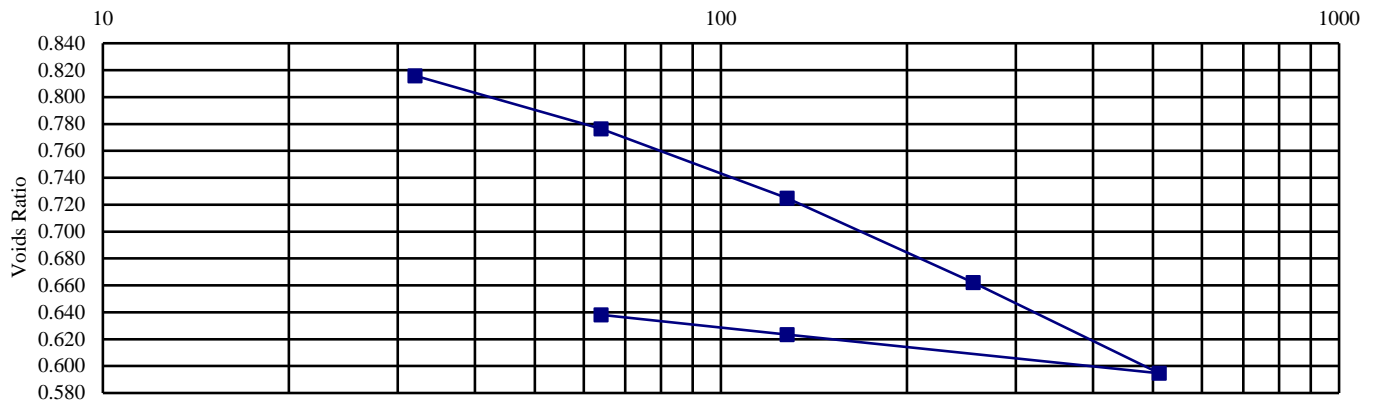
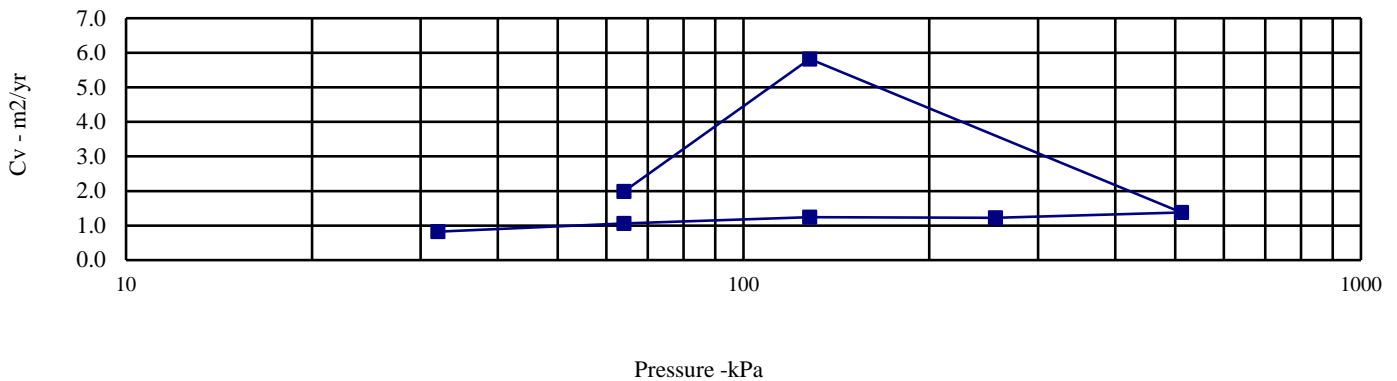
BS EN ISO 17892-5:2017

Hole Number: MS-BH27 Top Depth (m): 3.20

Sample Number: 13 Base Depth (m) :

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
Moisture Content (%):	35	kPa		m2/MN	m2/yr	within tube:	Vertical
Bulk Density (Mg/m3):	1.89	0	32	1.260	0.823	Method of preparation:	Trimmed from extruded material
Dry Density (Mg/m3):	1.40	32	64	0.678	1.058	Method used to determine CV:	T90
Voids Ratio:	0.892	64	128	0.454	1.242	Nominal temperature during test ' C:	20
Degree of saturation:	103.6	128	256	0.284	1.229	Remarks:	
Height (mm):	20.042	256	512	0.159	1.379		
Diameter (mm)	74.995	512	128	0.047	5.822		
Particle Density (Mg/m3):	2.65	128	64	0.143	1.988		
Assumed							



Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation

Contract No:
PSL22/7820
Client Ref:
F212561

INCREMENTAL LOADING OEDOMETER TEST

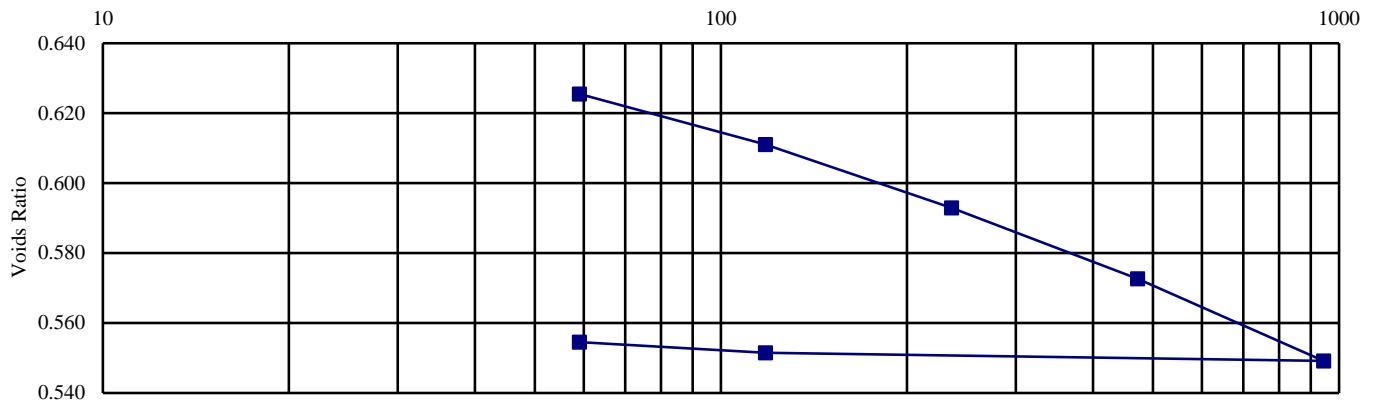
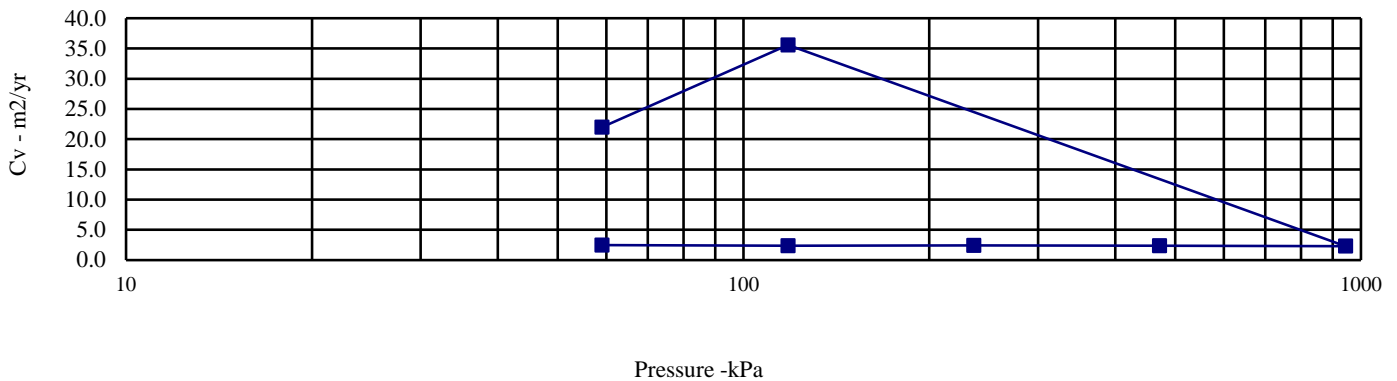
BS EN ISO 17892-5:2017

Hole Number: MS-BH27 **Top Depth (m):** 5.90

Sample Number: 22 **Base Depth (m) :**

Sample Type: UT

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	Top
Moisture Content (%):	25	kPa		m2/MN	m2/yr	within tube:	Vertical
Bulk Density (Mg/m3):	2.01	0	59	0.259	2.465	Method of preparation:	Trimmed from extruded material
Dry Density (Mg/m3):	1.61	59	118	0.151	2.390	Method used to determine CV:	T90
Voids Ratio:	0.651	118	236	0.096	2.417	Nominal temperature during test ' C:	20
Degree of saturation:	103.3	236	472	0.054	2.395	Remarks:	
Height (mm):	20.002	472	944	0.032	2.302		
Diameter (mm)	75.023	944	118	0.002	35.576		
Particle Density (Mg/m3):	2.65	118	59	0.033	22.007		
Assumed							



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7820
Client Ref:
F212561



LABORATORY REPORT



4043

Contract Number: PSL22/7894

Report Date: 22 December 2022
Client's Reference: F212561
Client Name: Fugro Geoservices Ltd
Armstrong House, Unit 43
Number One Industrial Estate
Medomsley Road
Consett
DH8 6TW

For the attention of: Andrew Alcock

Contract Title: Keadby 3 Low Carbon Gas Power Station Project - Ground Investigation

Date Received: 12/12/2022
Date Commenced: 12/12/2022
Date Completed: 22/12/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
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L Knight
(Senior Technician)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR

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Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH103	54	B	22.50		Brown very sandy clayey SILT.
BH104	8	B	1.20		Grey slightly gravelly sandy clayey SILT.
BH104	18	B	5.00		Brown slightly gravelly sandy clayey SILT.
BH104	25	B	8.00		Brown slightly gravelly silty SAND.



Keadby 3 Low Carbon Gas Power Station Project - Ground Investigation

Contract No:
PSL22/7894
Client Ref:
F212561

PARTICLE SIZE DISTRIBUTION TEST

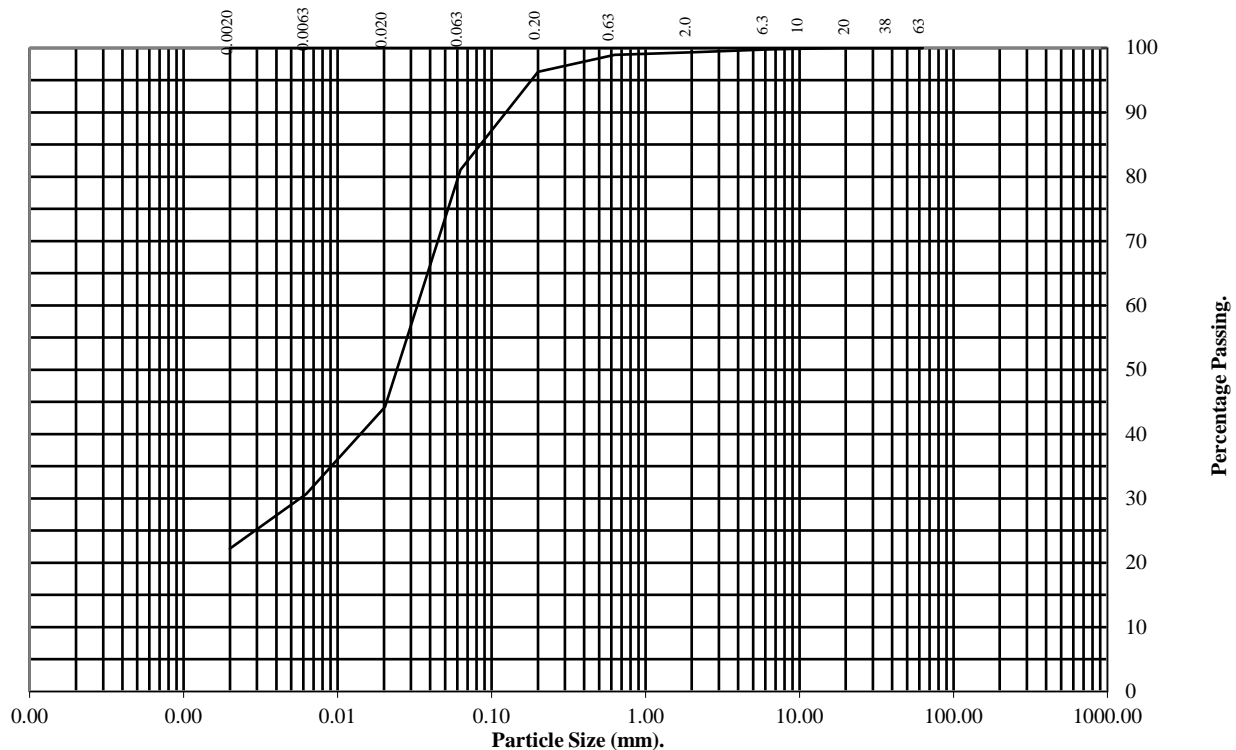
BS EN ISO 17892-4:2016

Sieve Method, Clause 5.2 & Pipette Method, Clause 5.4

Hole Number: **BH104** Top Depth (m): **1.20**

Sample Number: **8** Base Depth(m):

Sample Type: **B**

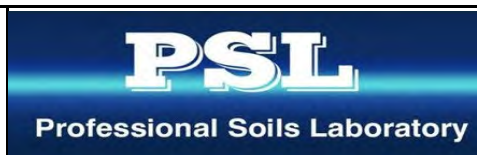


BS Test Sieve (mm)	Percentage Passing
63	100
37.5	100
20	100
10	100
6.3	100
2	99
0.63	99
0.2	96
0.063	81

Particle Diameter	Percentage Passing
0.020	44
0.0063	31
0.0020	22

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	18
Silt	59
Clay	22

Remarks:
See Summary of Soil Descriptions



Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation

Contract No:
PSL22/7894
Client Ref:
F212561

PARTICLE SIZE DISTRIBUTION TEST

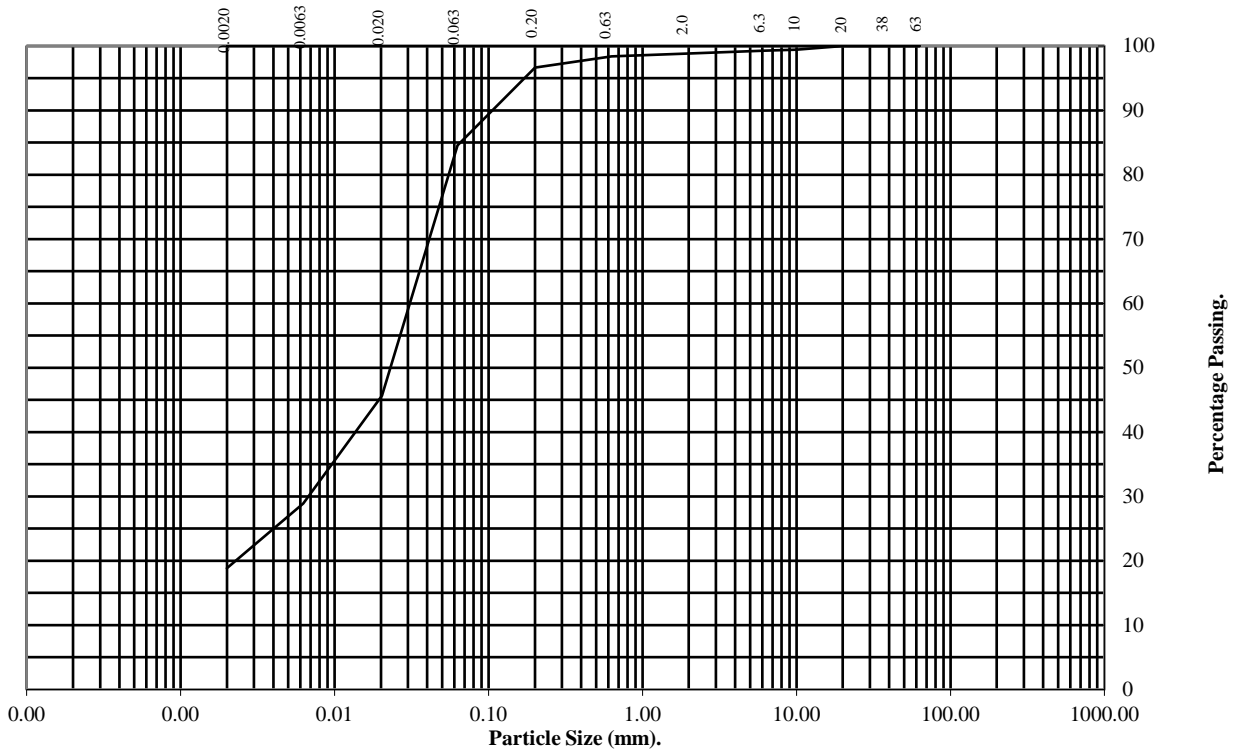
BS EN ISO 17892-4:2016

Sieve Method, Clause 5.2 & Pipette Method, Clause 5.4

Hole Number: **BH104** Top Depth (m): **5.00**

Sample Number: **18** Base Depth(m):

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
63	100
37.5	100
20	100
10	99
6.3	99
2	99
0.63	98
0.2	97
0.063	85

Particle Diameter	Percentage Passing
0.020	46
0.0063	29
0.0020	19

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	14
Silt	66
Clay	19

Remarks:

See Summary of Soil Descriptions



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7894
Client Ref:
F212561

PARTICLE SIZE DISTRIBUTION TEST

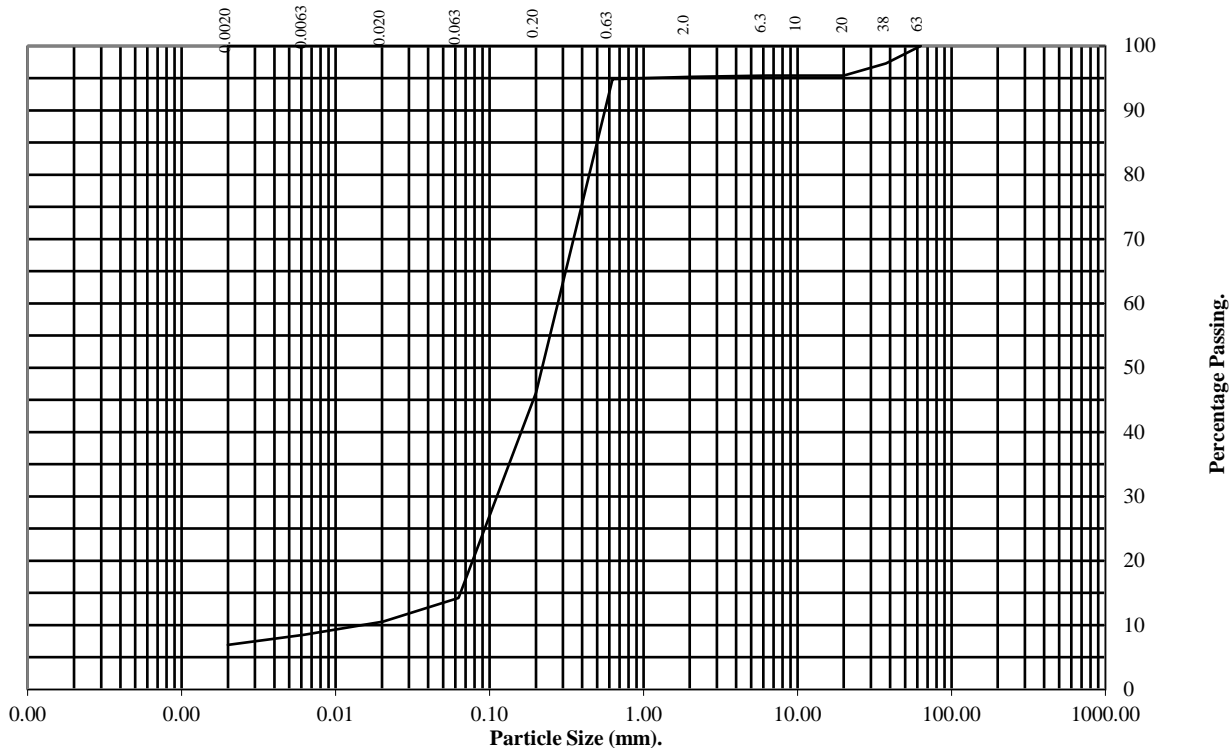
BS EN ISO 17892-4:2016

Sieve Method, Clause 5.2 & Pipette Method, Clause 5.4

Hole Number: **BH104** **Top Depth (m):** **8.00**

Sample Number: **25** **Base Depth(m):**

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
63	100
37.5	97
20	95
10	95
6.3	95
2	95
0.63	95
0.2	46
0.063	14

Particle Diameter	Percentage Passing
0.020	11
0.0063	9
0.0020	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	5
Sand	81
Silt	7
Clay	7

Remarks:
See Summary of Soil Descriptions



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract No:
PSL22/7894
Client Ref:
F212561

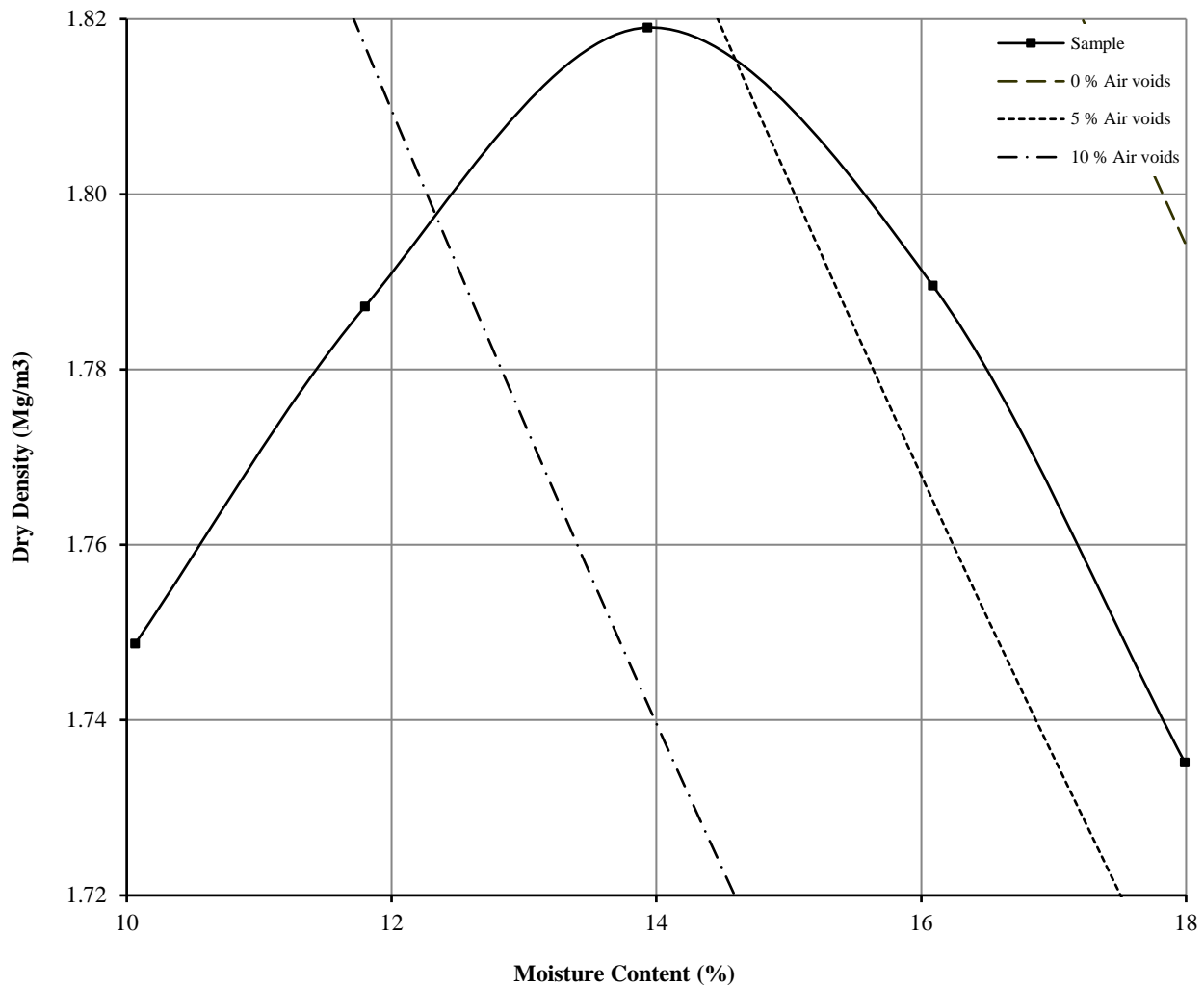
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.3 : 1990

Hole Number: **BH103** Top Depth (m) : **22.50**

Sample Number: **54** Base Depth (m) :

Sample Type: **B**



Initial Moisture Content:	24	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.82		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	14			
Remarks See summary of soil descriptions				



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract
PSL22/7894
Client Ref
F212561

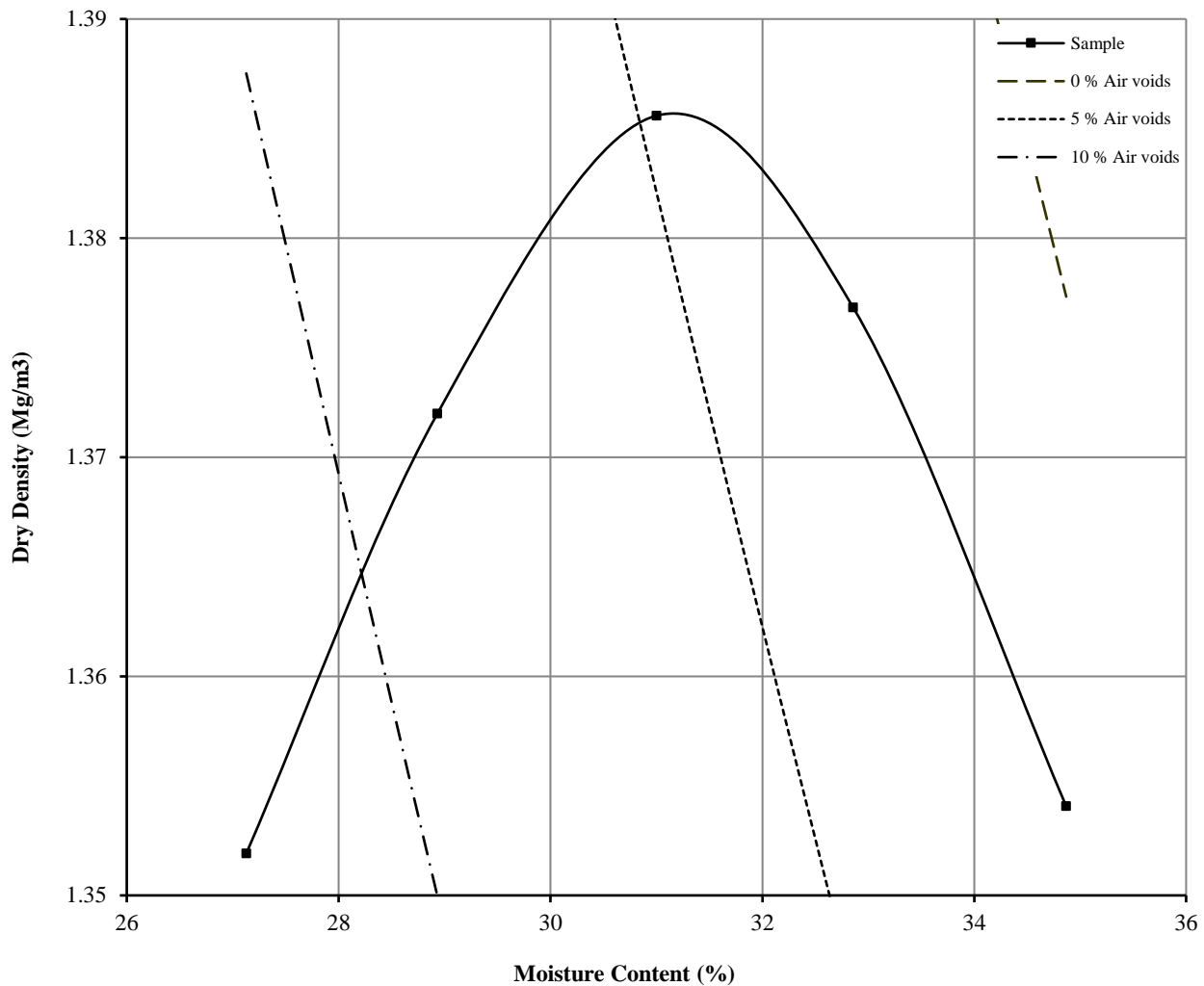
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.3 : 1990

Hole Number: **BH104** Top Depth (m) : **1.20**

Sample Number: **8** Base Depth (m) :

Sample Type: **B**



Initial Moisture Content:	40	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.39		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	31			
Remarks See summary of soil descriptions				



**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

Contract
PSL22/7894
Client Ref
F212561

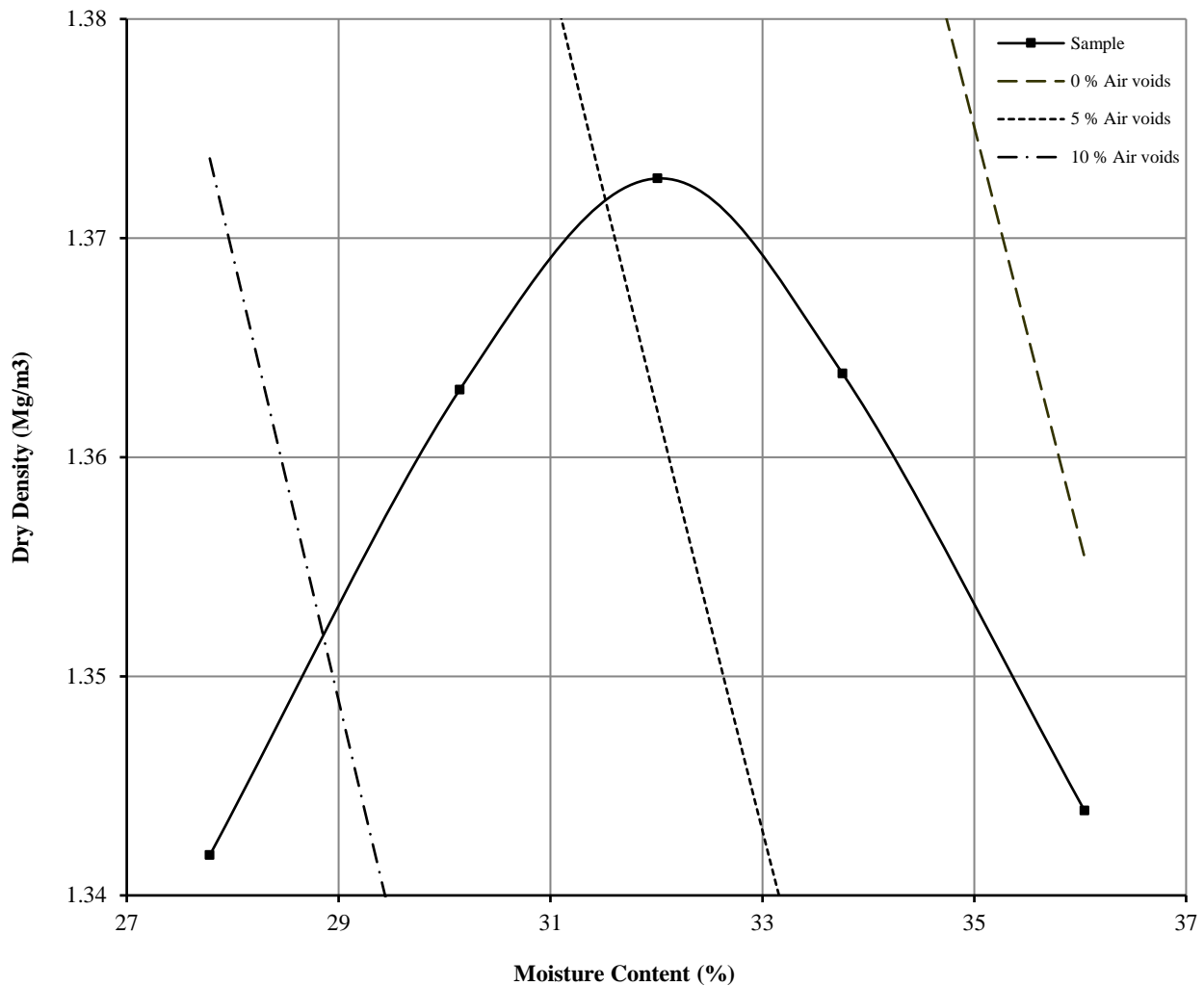
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.3 : 1990

Hole Number: **BH104** Top Depth (m) : **5.00**

Sample Number: **18** Base Depth (m) :

Sample Type: **B**



Initial Moisture Content:	38	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m ³):	2.65	Assumed	Material Retained on 37.5 mm Test Sieve (%):	0
Maximum Dry Density (Mg/m ³):	1.37		Material Retained on 20.0 mm Test Sieve (%):	0
Optimum Moisture Content (%):	32			
Remarks See summary of soil descriptions				



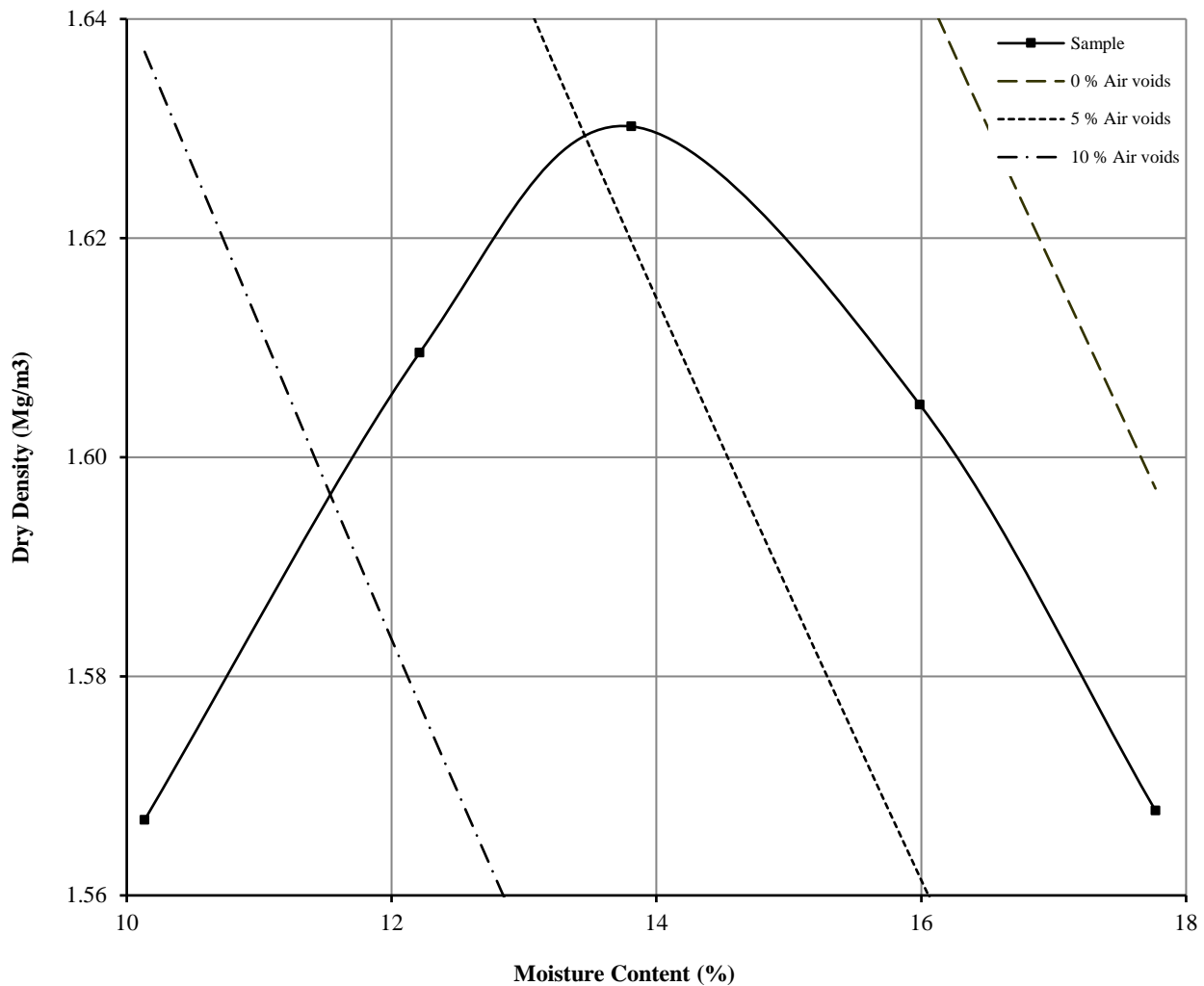
**Keadby 3 Low Carbon Gas Power Station
Project - Ground Investigation**

**Contract
PSL22/7894
Client Ref
F212561**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number: **BH104** Top Depth (m) : **8.00**
 Sample Number: **25** Base Depth (m) :
 Sample Type: **B**



Initial Moisture Content:	21	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m ³):	2.23	Assumed	Material Retained on 37.5 mm Test Sieve (%):	3
Maximum Dry Density (Mg/m ³):	1.63		Material Retained on 20.0 mm Test Sieve (%):	5
Optimum Moisture Content (%):	14			
Remarks See summary of soil descriptions				



**Keadby 3 Low Carbon Gas Power Station
 Project - Ground Investigation**

**Contract
 PSL22/7894
 Client Ref
 F212561**

Appendix L

Geoenvironmental Laboratory Test Results

Appendix L Contents

- L1 Guidance Notes
 - L1.1 Guidance Notes on Chemical Analysis for Contaminated Land Assessment
 - L1.2 Project-Specific Geoenvironmental Testing Suites
- L2 Accreditation and Calibration Reports
- L3 Schedules
 - L3.1 Schedule of Geoenvironmental Laboratory Testing
- L4 Test Certificates

L.1 Guidance Notes

Title	Reference
Guidance Notes on Chemical Analysis for Contaminated Land Assessment:	L.1.1
a. Sampling, Sample Preservation, Transport and Storage	L.1.1.1
b. Scheduled Testing	L.1.1.2
c. Laboratory Analytical Methodologies and Accreditation	L.1.1.3
d. Deviating Samples	L.1.1.4
e. Waste Acceptance Criteria Testing	L.1.1.5
f. Chemical Analysis on Leachates Prepared from Soil Samples	L.1.1.6
g. AGS Data for Chemistry Testing	L.1.1.7
h. References	L.1.1.8
Project-Specific Geoenvironmental Testing Suites	L.1.2

L.1.1 Guidance Notes on Chemical Analysis for Contaminated Land Assessment

L.1.1.1 Sampling, Sample Preservation, Transport and Storage

Sampling of soils for environmental chemical analysis is undertaken to the standards set out in BS 10175:2011+A2:2017, sampling of groundwater is undertaken as per BS EN ISO 22475-1:2021 and BS ISO 5667-11:2009, sampling of surface waters as per BS EN ISO 5667-1:2006 and BS ISO 5667-6:2016+A11:2020, and sampling of ground gases for environmental testing as per CIRIA Guidance C665.

The sample container types used are dictated by the requirements of chemical testing as set out in the project specification and as provided by the selected environmental testing laboratory. Sample containers are filled as instructed by laboratory guidelines, ensuring minimisation of sample headspace.

Where sample volumes are limited by the sampling technique (e.g. dynamic sampling) certain sample container types may be prioritised to achieve the most comprehensive testing possible.

Samples are stored on site in a refrigerator prior to despatch, unless otherwise stated. Samples are despatched to the analytical laboratory on the day of sampling under Chain of Custody (CoC), packed in cool boxes. To maintain the temperature of the samples ice packs are placed in the cool boxes. Sample temperature is measured on receipt at the designated analytical laboratory. Temperature control is maintained at the analytical laboratory prior to receipt of testing instructions, preparation and analysis.

Where testing instructions are to be provided by the Engineer/Client blank testing schedules are provided as standard within 1 to 2 working days of sampling.

L.1.1.2 Scheduled Testing

The requested chemical analyses scheduled on available samples given on the relevant CoC.

The schedule lists the date of sampling, CoC number under which the samples were transported, tests requested and laboratory certificate reference for all samples.

L.1.1.3 Laboratory Analytical Methodologies and Accreditation

Analytical laboratories used by FGSL are accredited by UKAS (United Kingdom Accreditation Service). Dependent on Limits of Detection being achievable as requested at the time of scheduling, chemical analyses on soils, waters and gases will, where possible, be accredited by MCERTS (Monitoring Certification Scheme). MCERTS is the Environment Agency's performance standard for laboratories undertaking chemical testing. The accreditation applicable for individual tests is presented on the analytical laboratory test certificates presented in this report.

A summary of the methodologies used by the analytical laboratory in carrying out the requested analyses is presented on the summary pages of the analytical laboratory test

certificates. Further information may be obtained on the test methodologies by contacting the laboratory concerned.

L.1.1.4 Deviating Samples

UKAS is the accreditation body responsible for auditing laboratories to both ISO 17025 and MCERTS in the UK. All UKAS accredited laboratories are required to operate appropriate procedures for the handling of deviating samples.

Deviating (or non-conforming) samples are defined as those which may have been compromised in some way during sampling, transportation, storage or analysis, and which may cause the integrity of the analytical data to be in doubt.

Examples of deviating samples that can occur from sampling, transportation and storage issues include:

- Incorrect sample containers for analyses requested, for example, no separate volatile container supplied or samples for organics analysis supplied in plastic containers;
- Headspace present in containers for volatile compounds or Biological Oxygen Demand (BOD) analyses;
- No sampling date supplied (mandatory for MCERTS);
- No sampling time supplied (applicable for certain water parameters);
- Temperature exceeded;
- Holding time for the analysis exceeded.

Where deviating samples are subsequently analysed, UKAS requires that the competent laboratory 'shall include a disclaimer in the report, clearly stating that the sample was deviating and that, as a result, the test result(s) may be invalid'. It is also a condition of MCERTS that the whole results certificate is included in reports sent to the Client, including all supporting information, and not just the results sheets. Each analytical report therefore contains a page detailing the deviating samples and the reasons for the non-conformity.

FGSL undertakes to sample, record, transport and store samples in such a way that deviating samples should not occur unless for reasons outside of FGSL's control.

L.1.1.5 Waste Acceptance Criteria Testing

Where samples have been scheduled for Waste Acceptance Criteria (WAC) testing to BS EN 12457, Part 3, analysis is undertaken for one of the Full, Hazardous or Inert WAC suites, as specified and as detailed below.

Full WAC Suite: The solid material from each sample is tested for: total organic carbon (TOC); loss on ignition (LOI); benzene, toluene, ethylbenzene and xylene (BTEX); Polychlorinated biphenyls (PCB's); Total petroleum hydrocarbons (TPH (C10 – C40)); Polycyclic aromatic hydrocarbons (PAHs); pH value; and acid neutralisation capacity. Two leachate specimens for each sample are prepared at liquid to solid ratios of 2:1 and then 8:1 and both are analysed for arsenic, barium, cadmium, chromium, copper, mercury, molybdenum, nickel, lead,

antimony, selenium, zinc, chloride, fluoride, sulphate, total dissolved solids, phenol index and dissolved organic carbon.

Hazardous WAC Suite: The solid material from each sample is tested for (TOC), (LOI) and acid neutralisation capacity. Two leachate specimens for each sample are prepared at liquid to solid ratios of 2:1 and then 8:1 and both are analysed for arsenic, barium, cadmium, chromium, copper, mercury, molybdenum, nickel, lead, antimony, selenium, zinc, chloride, fluoride, sulphate, total dissolved solids and dissolved organic carbon.

Inert WAC Suite: The solid material from each sample is tested for TOC, BTEX, PCB's, TPH (C10 – C40) and PAH. Two leachate specimens for each sample are prepared at liquid to solid ratios of 2:1 and then 8:1 and both analysed for arsenic, barium, cadmium, chromium, copper, mercury, molybdenum, nickel, lead, antimony, selenium, zinc, chloride, fluoride, sulphate, total dissolved solids, phenol index and dissolved organic carbon.

Results calculation: The results of the 2:1 and 8:1 leachate specimens are then calculated to give a liquid to solid ratio of 10:1 result in mg/kg. These 10:1 results, and the results of the solid determinations, can be compared to the values set out in the guidance produced by the Environment Agency (2005) to assist with appropriate disposal to landfill, under the Landfill Directive (1999/31/EC).

L.1.1.6 Chemical Analysis on Leachates Prepared from Soil Samples

Where artificially produced leachate specimens are requested from soil samples the leachate preparation technique is in accordance with British Standard BS EN 12457, as detailed on the Schedules.

The following is a summary of the different leaching preparations available:

- BS EN 12457-1: One stage test carried out at a liquid to solid ratio of 2:1;
- BS EN 12457 2: One stage test carried out at a liquid to solid ratio of 10:1;
- BS EN 12457 3: Two stage test carried out at a liquid to solid ratio of 2:1 followed by 8:1, giving a cumulative liquid to solid ratio of 10:1.

The resultant leachate specimens are then tested for the list of parameters as scheduled.

L.1.1.7 AGS Data for Chemistry Testing

Chemical testing results are provided in AGS 4.0 format. It should be noted that where laboratory methodologies differ, or determinants tested do not appear on the AGS list for chemical test names (ERES_CODE), a new and unique code may be used for an individual test.

L.1.1.8 References

BS 10175:2011+ A2:2017 Investigation of potentially contaminated sites. Code of practice. British Standards Institute (BSI), December 2017. ISBN 978 0 580 98996 4.

Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste.

Environment Agency (2005) Guidance on Sampling and Testing of Wastes to meet Landfill Waste Acceptance Procedures., Version 1. April 2005.

BS EN 12457-1:2002. Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 2 l/kg for materials with high solid content and with particle size below 4 mm (without or with size reduction). BSI, London (2002).

BS EN 12457-2:2002. Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 4 mm (without or with size reduction). BSI, London (2002).

BS EN 12457-3:2002. Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges. Two stage batch test at a liquid to solid ratio of 2 l/kg and 8 l/kg for materials with a high solid content and with a particle size below 4 mm (without or with size reduction). BSI, London (2002).

BS EN ISO 22475-1. Geotechnical investigation and testing – sampling methods and groundwater measurements – Part 1: Technical principles for execution. BSI, Milton Keynes (2021).

BS ISO 5667-11:2009. Water Quality. Sampling. Guidance on sampling of groundwaters. BSI, Milton Keynes (2009).

BS EN ISO 5667-1:2006. Water quality. Sampling. Guidance on the design of sampling programmes and sampling techniques. BSI, Milton Keynes (2006).

BS ISO 5667-6: 2016+A11:2020. Water quality. Sampling. Guidance on sampling of rivers and streams. BSI, Milton Keynes (2020).

BSI. (2020). *Taking soil samples for determination of volatile organic compounds (VOCs). Specification.* (BS 10176:2020). <https://www.bsigroup.com>

Wilson, S. et al. (2007). Assessing risks posed by hazardous ground gases, C665, CIRIA, London.

L.1.2 Project-Specific Geoenvironmental Testing Suites

Table L.1 Soil Suite E

Soil Suite E
<p>Metals: Arsenic, Boron, Cadmium, Chromium, Chromium (Hexavalent), Copper, Iron, Lead, Mercury, Nickel, Selenium, Zinc</p> <p>Moisture Content, pH, Total Sulphur (ASB), Sulphur (elemental), w/s Sulphate as SO₄, Sulphate (total), Sulphide (easily liberated), Cyanide (Total), Cyanide (Free), Exchangeable Ammonia as N, Exchangeable Ammonia as NH₄, Nitrate as NO₃, Nitrite as NO₂, Soil Organic Matter (SOM),</p> <p>US EPA Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, PAH, Total Detected USEPA 16</p> <p>Hydrocarbons: Extractable Petroleum Hydrocarbons (EPH) >C10-C40, Total EPH C6-C40, Gasoline Range Organics (GRO) >C5-C10, EPH C6-C10, BTEX's: Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, Sum of BTEX, Methyl Tertiary Butyl Ether (MTBE)</p> <p>Phenols: Phenol, Cresols, Xylenols, Phenols (total detected monohydric)</p>

Table L.2 Soil Suite F

Soil Suite F
<p>TPH CWG: Aliphatics (C5-C6), Aliphatics (C6-C8), Aliphatics (C8-C10), Aliphatics (C10-C12), Aliphatics (C12-C16), Aliphatics (C16-C21), Aliphatics (C21-C35), Aliphatics (C35-C44), Total Aliphatics (C10-C44), Aromatics (EC5-EC7), Aromatics (EC7-EC8), Aromatics (EC8-EC10), Aromatics (EC10-EC12), Aromatics (EC12-EC16), Aromatics (EC16-EC21), Aromatics (EC21-EC35), Aromatics (EC35-EC44), Total Aromatics (EC10-EC44), Total Ali/Aro (C10-C44)</p> <p>BTEX's: Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, Sum of BTEX, Methyl Tertiary Butyl Ether (MTBE)</p>

Table L.3 Soil Suite G

Soil Suite G
<p>Volatile Organic Compounds – comprehensive Suite</p> <p>Semi-volatile Organic Compounds – comprehensive Suite</p>

Table L.4 Soil Suite H

Soil Suite H
<p>Organochlorine Pesticides, Organophosphorus Pesticides and Triazine herbicides: Aldrin, alpha-Hexachlorocyclohexane (HCH), Azinphos-methyl, beta-Hexachlorocyclohexane (HCH), Diazinon, Dichlorvos, Dieldrin, Disulfoton, Endosulphan I, Endosulphan II, Endosulphan sulphate, Endrin, Ethion, Fenitrothion, gamma-Hexachlorocyclohexane (HCH / Lindane), Heptachlor, Heptachlor epoxide, Malathion, Methyl parathion, Mevinphos, p,p-Methoxychlor, Phorate, Parathion, p,p-DDE, p,p-TDE (DDD), p,p-DDT.</p> <p>Acid Herbicides: 2,4,5-T, 2,4,5-TP (Fenoprop), 2,4-D, 2,4-DB, 2,4-Dichloroprop (2,4 DP), 4-Chlorophenoxyacetic acid (4-CPA), Acifluorfen, Bentazone, Bromoxynil, Dicamba, Diclofop, Dinoseb, DNOC, Fluroxypyr, Ioxynil, 2-methyl-4-Chlorophenoxyacetic acid (MCPA), 4-(4-Chloro-o-tolyloxy) butyric acid (MCPB), Mecoprop (MCP), Propoxycarbazone-sodium, Triclopyr, Triclosan</p>

Table L.5 Soil Suite I

Soil Suite I
<p>Asbestos screen and Identification</p> <p>Asbestos Quantification if screen positive</p>

Table L.6 Soil Suite J

Soil Suite J
<p>PCB 7 congeners and PCB WHO 12 congeners: PCB congener 101, PCB congener 105, PCB congener 114, PCB congener 118, PCB congener 123, PCB congener 126, PCB congener 138, PCB congener 153, PCB congener 156, PCB congener 157, PCB congener 167, PCB congener 169, PCB congener 180, PCB congener 189, PCB congener 28, PCB congener 52, PCB congener 77, PCB congener 81, Sum of detected PCB 7 Congeners, Sum of detected WHO 12 PCBs.</p>

Table L.7 Leachate Suite K

Leachate Suite K
<p>Leachate Prep 2:1 with leachate analysis for:</p> <p>Metals (dissolved): Arsenic, Boron, Cadmium, Calcium, Chromium, Chromium (Hexavalent), Copper, Iron, Lead, Mercury, Nickel, Selenium, Zinc</p> <p>Total Hardness (CaCO₃), pH, Sulphate, Cyanide (Total), Cyanide (Free), Ammoniacal Nitrogen as N and NH₄, Nitrate as NO₃, Nitrite as NO₂, Total Organic Carbon (TOC)</p> <p>US EPA Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, PAH – USEPA 16, Total</p>

Table L.8 Groundwater Suite L

Groundwater Suite L
<p>Metals (dissolved): Arsenic, Boron, Cadmium, Chromium, Chromium (Hexavalent), Copper, Iron, Lead, Mercury, Nickel, Selenium, Zinc</p> <p>pH, Total Sulphur (ASB), Sulphur (elemental), Sulphate as SO₄, Sulphate (total), Sulphide (easily liberated), Cyanide (Total), Cyanide (Free), Exchangeable Ammonia as N, Exchangeable Ammonia as NH₄, Nitrate as NO₃, Nitrite as NO₂, Soil Organic Matter (SOM), Moisture Content</p> <p>US EPA Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene, PAH, Total Detected USEPA 16</p> <p>Hydrocarbons: Extractable Petroleum Hydrocarbons (EPH) range >C10-C40, EPH C6-C40, Gasoline Range Organics (GRO) >C5-C10, BTEX's: Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, Sum of BTEX, Methyl Tertiary Butyl Ether (MTBE).</p> <p>Phenols: Phenol, Cresols, Xylenols, Phenols (total detected monohydric)</p>

Table L.9 Groundwater Suite M

Groundwater Suite M
<p>TPH CWG: Aliphatics (C5-C6), Aliphatics (C6-C8), Aliphatics (C8-C10), Aliphatics (C10-C12), Aliphatics (C12-C16), Aliphatics (C16-C21), Aliphatics (C21-C35), Aliphatics (C35-C44), Total Aliphatics (C10-C44), Aromatics (EC5-EC7), Aromatics (EC7-EC8), Aromatics (EC8-EC10), Aromatics (EC10-EC12), Aromatics (EC12-EC16), Aromatics (EC16-EC21), Aromatics (EC21-EC35), Aromatics (EC35-EC44), Total Aromatics (EC10-EC44), Total Ali/Aro (C10-C44)</p> <p>BTEX's: Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, Sum of BTEX, Methyl Tertiary Butyl Ether (MTBE)</p>

Table L.10 Groundwater Suite N

Groundwater Suite N
<p>Volatile Organic Compounds – comprehensive Suite</p> <p>Semi-volatile Organic Compounds – comprehensive Suite</p>

Table L.11 Groundwater Suite O

Groundwater Suite O
<p>Acid Herbicides: 2,3,6-Trichlorobenzoic acid, 2,4,5-Trichlorophenoxyacetic acid, 2,4-DB, 2,4-Dichlorophenoxyacetic acid, Benazolin, Bromoxynil, Clopyralid, Dicamba, Dichlorprop, Dinitro-o-cresol, Fenoprop (Silvex), Fluoroxypyr, Ioxynil, MCPA, MCPB, Mecoprop, Pentachlorophenol, Triclopyr.</p> <p>Pesticide Suite I: Aldrin, alpha-Hexachlorocyclohexane (HCH), beta-Hexachlorocyclohexane (HCH), cis-Chlordane, delta-HCH, Dieldrin, Endosulphan I, Endosulphan II, Endosulphan sulphate, Endrin, gamma-HCH (Lindane), Heptachlor, Heptachlor epoxide, Isodrin, o,p'-DDD (TDE), o,p'-DDE, o,p'-DDT, o,p'-Methoxychlor, p,p'-DDD (TDE), p,p'-DDE, p,p'-DDT, p,p'-Methoxychlor, Permethrin I, Permethrin II, trans-Chlordane, Trifluralin.</p> <p>Pesticide Suite II: 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,3,5-Trichlorobenzene, Atrazine, Azinphos ethyl, Azinphos-methyl, Carbophenothion, Chlorfenvinphos, Chlorpyrifos, cis-Chlordane, Chlorpyrifos-methyl, Demeton-S-methyl, Diazinon, Dichlobenil, Dichlorvos, Dimethoate, Disulfoton, Ethion, Fenitrothion, Fenthion, Hexachlorobenzene, Hexachlorobutadiene, Malathion, Methyl parathion, Mevinphos, Parathion, Pendimethalin, Phorate, Phosalone, Pirimiphos-methyl, Propetamphos, Simazine, Tecnazene, trans-Chlordane, Triadimefon, Triallate, Triazophos.</p>

Table L.12 Groundwater Suite P

Groundwater Suite P
<p>PCB 7 congeners and PCB WHO 12 congeners: PCB congener 101, PCB congener 105, PCB congener 114, PCB congener 118, PCB congener 123, PCB congener 126, PCB congener 138, PCB congener 153, PCB congener 156, PCB congener 157, PCB congener 167, PCB congener 169, PCB congener 180, PCB congener 189, PCB congener 28, PCB congener 52, PCB congener 77, PCB congener 81, Sum of detected PCB 7 Congeners, Sum of detected WHO 12 PCBs.</p>

L.2 Accreditation and Calibration Reports


Title	Reference
ALS UKAS Schedule of Accreditation	UKAS number 1291

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>1291</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>ALS Laboratories (UK) Limited</h3> <p>Issue No: 134 Issue date: 31 October 2022</p>	
	<p>Units 7 & 8 Hawarden Business Park Manor Road Off Manor Lane Hawarden Deeside CH5 3US</p>	<p>Contact: Kathleen Burns [REDACTED] [REDACTED] E-Mail: [REDACTED]@alsglobal.com Website: www.alsenvironmental.co.uk</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ASBESTOS IN BULK MATERIALS including materials and products suspected of containing asbestos	<p><u>Health and Hygiene</u></p> <p>Identification of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite</p>	<p>Health and Safety Executive - Asbestos: The Analysts' Guide (HSG 248) – 2021</p> <p>Documented In-House Method TM 048 using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248</p>
ASBESTOS IN SOILS – The Identification of Asbestos fibres in bulk samples of Soil, <i>specifically: Soil Aggregate</i>	<p>Identification of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite</p>	<p>Documented In-House Method TM 048 using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248</p>
ASBESTOS IN SOILS – The Identification and Quantification of Asbestos fibres in bulk samples of Soil, <i>specifically: Soil</i>	<p>Identification and Quantification of Asbestos content of: Amosite Chrysotile Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite</p>	<p>Documented In-House Methods TM 048 for identification using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248. Documented In-House Method TM 304 for quantification of asbestos.</p>
ASBESTOS IN SOILS (Dustiness)	<p>Measurement of Dustiness</p>	<p>Documented In-House Method TM 419 based on BS EN15051-2:2013 +1:2016 “Measurement of the dustiness of bulk materials; Part 2: Rotating drum method” based on HSG 248</p>



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ALS Laboratories (UK) Limited

Issue No: 134 Issue date: 31 October 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>NATURAL GAS</p> <p>AMBIENT AIR</p>	<p><u>Chemical Tests</u></p> <p>Monoethylene Glycol (MEG) in distributed Natural Gas</p> <p>Volatile Organic Compounds,</p> <p>1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,2,3-Trimethylbenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane 1,2-Dichlorotetrafluoroethane 1,3,5-Trimethylbenzene 1,3-Butadiene 1,4-Dichlorobenzene</p> <p>2-Butanone (MEK) 2-Hexanone</p> <p>4-Methyl-2-pentanone Acetone + Propanal</p> <p>Acrolein Benzene Benzyl Chloride Bromodichloromethane Bromoform</p>	<p>Documented In-House Methods in the series TM 000</p> <p>TM 121 by Thermal desorption and GC-FID</p> <p>TM 330 based upon US EPA TO-15</p>



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Issue No: 134 Issue date: 31 October 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>AMBIENT AIR (cont'd)</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Organic Compounds (cont'd), specifically:</p> <p>Bromomethane</p> <p>Carbon Disulfide Carbon Tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Cyclohexane Dichlorodifluoromethane</p> <p>Ethylbenzene Hexanal Hexane</p> <p>m/p-Xylene</p> <p>Methylene Chloride MTBE o-Xylene</p> <p>Styrene Tetrachloroethene Toluene trans-1,2-Dichloroethene trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane Trichlorotrifluoroethane Vinyl Acetate Vinyl Chloride</p>	<p>Documented In-House Methods in the series TM 000</p> <p>TM 330 based upon US EPA TO-15 by GC-MS</p>



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

ALS Laboratories (UK) Limited

Issue No: 134 Issue date: 31 October 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS	<u>Chemical Tests</u> Exchangeable Ammonium Exchangeable Magnesium Exchangeable Potassium Water Soluble Anions (2:1), specifically: Chloride Bromide Nitrate Sulphate Water soluble Anions (2:1), specifically: Chloride Sulphate Total Cyanide Easily Liberated/Free Cyanide Thiocyanate Extractable Phosphorus (Olsen's Phosphorus)	TM 024 by steam distillation and titration TM 244 by ICP-OES based on BS 3882:2015 TM 019 by Ion Chromatography (IC) TM 243 by Kone analyser TM 153 by segmented flow analyser based on AWWA/APHA 20 th Edition - Method 4500 TM 229 by Kone analyser based upon The Analysis of Agricultural Materials, MAFF, Third edition, 1986
SOILS and SEWAGE SLUDGE	Hexavalent Chromium	TM 151 by Kone analyser
SOILS and SLUDGE	Acid Extractable Fluoride	TM397 by ion selective electrode
	Dry Matter at 105°C Total Ash at 550°C	Documented In-House Method TM 236 The Determination of the Dry Solids residue at 105°C and The Total Ash after ignition at 550°C
Sludge	Alkalinity (liquid fraction)	TM 043 by auto-titrator
	pH	TM 133 using a GL pH Meter
	Total Organic Carbon (TOC)	TM 132 by combustion method (ELTRA CS800)



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p><u>Metals:</u> Antimony Arsenic Barium Beryllium Boron Cadmium Cobalt Chromium Copper Iron Lead Manganese Mercury Molybdenum Nickel Selenium Strontium Thallium Tin Vanadium Zinc</p> <p>Water Soluble Boron (10:1)</p> <p>Loss on ignition</p> <p>Acid Extractable Sulphate</p> <p>Gasoline Range Hydrocarbons, Total, in the range >C5 to C12</p> <p>Petroleum Hydrocarbons in the range >C8 - C40</p> <p>Mercury</p> <p>Elemental Sulphur</p> <p>Sulphide</p>	<p>TM 181 by ICP-OES</p> <p>TM 222 by ICP-OES</p> <p>TM 018 by gravimetry</p> <p>TM 221 by ICP-OES</p> <p>TM 089 Headspace GC-FID based on USEPA Methods 8020 and 602</p> <p>TM 154 by Flash - GC-FID</p> <p>TM 418 by Cold Vapour Atomic Fluorescence Spectroscopy</p> <p>TM 136 by HPLC</p> <p>TM 180 by ion selective electrode</p>



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SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons: Dichlorodifluoromethane Chloromethane Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane Trans-1,2-dichloroethene Dichloromethane Chloroform 1,1,1-trichloroethane 1,1-dichloropropene Benzene carbon tetrachloride dibromomethane 1,2-dichloropropane bromodichloromethane trichloroethene cis-1,3dichloropropene 1,1,2-trichloroethane Toluene 1,3-dichloropropane dibromochloromethane tetrachloroethene 1,1,1,2-tetrachloroethane chlorobenzene ethylbenzene m/p-xylene Bromoform o-xylene 1,2,3-trichloropropane isopropylbenzene bromobenzene 2-chlorotoluene propylbenzene 4-chlorotoluene 1,2,4-trimethylbenzene 1,3-dichlorobenzene 1,4-dichlorobenzene Carbon disulphide 1,1-dichloroethene 1,1-dichloroethane cis-1,2-dichloroethene bromochloromethane</p>	<p>TM 116 by Headspace GC-MS based on USEPA Methods 8240, 8120, 8020, 624, 610 and 602</p>



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SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons: (cont'd) 1,2-dibromoethane Styrene 1,3,5-trimethylbenzene tert-butylbenzene 1,2-dichlorobenzene 1,2-dibromo-3-chloropropane naphthalene 1,2,3-trichlorobenzene Tert-butyl methyl ether 1,2-Dichloroethane Tert-amyl methyl ether 1,1,2,2-Tetrachloroethane</p> <p>pH</p> <p>Monohydric Phenols: phenol cresols xylenols 2,3,5-trimethyl phenol 2-isopropylphenol Total - Sum of the above 5 Monohydric Phenols</p> <p>Dichloromethane Extractable Compounds</p> <p>Extractable Petroleum Hydrocarbons (EPH), in the range >C8 to C40</p> <p>Total Organic Carbon (TOC)</p> <p>Total Carbon</p> <p>Sulphur</p>	<p>TM 116 by Headspace GC-MS based on USEPA Methods 8240, 8120, 8020, 624, 610 and 602</p> <p>TM 133 using a GL pH Meter (Ref: Modified BS 1377:Part 3:1990)</p> <p>TM 062 by HPLC</p> <p>TM 004 by Solvent Extraction Apparatus</p> <p>TM 415 by solvent extraction and GCxGC-FID</p> <p>TM 132 by combustion method</p> <p>TM 132 by combustion method</p> <p>TM 132 by combustion method (ELTRA CS800)</p>



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SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Polynuclear Aromatic Hydrocarbons (PAH): Naphthalene^{1,2} Acenaphthylene² Acenaphthene² Fluorene² Phenanthrene^{1,2} Anthracene^{1,2} Fluoranthene^{1,2} Pyrene² benz(a)anthracene^{1,2} Chrysene^{1,2} Benzo(b)fluoranthene² Benzo(k)fluoranthene^{1,2} Benzo(a)pyrene^{1,2} Indeno(123cd)pyrene^{1,2} Dibenzo(ah)anthracene² Benzo(ghi)perylene^{1,2}</p> <p>Speciated Extractable Petroleum Hydrocarbons: Total EPH >C10-C40 Aliphatic >C10-C12 Aliphatic >C12-C16 Aliphatic >C16-C21 Aliphatic >C21-C35 Aliphatic >C35-C40 Aromatic >C10-C12 Aromatic >C12-C16 Aromatic >C16-C21 Aromatic >C21-C35 Aromatic >C35-C40 Total Aliphatic >C10-C40 Total Aromatic >C10-C40</p>	<p>TM 218 by Solvent Extraction and GC-MS</p> <p>TM 414 by GCxGC-FID</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) PCB congeners: PCB 28 PCB 52 PCB 77 PCB 81 PCB 101 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 138 PCB 153 PCB 156 PCB 157 PCB 167 PCB 169 PCB 180 PCB 189	TM 168 using GC-MS



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Total cyanide Easily liberated/Free cyanide Thiocyanate</p> <p>Water Soluble Boron (10:1)</p> <p>Water Soluble Anions (2:1), specifically: Chloride Bromide Nitrate Sulphate</p> <p>Elemental Sulphur</p> <p>Arsenic Beryllium Cadmium Cobalt Chromium Copper Manganese Mercury Nickel Lead Zinc</p> <p>Exchangeable Ammonium</p> <p>pH</p> <p>Loss on ignition</p> <p>Water soluble sulphate 2:1 Water soluble chloride 2:1</p> <p>Acid Extractable Sulphate</p>	<p>Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - chemical testing of soil</p> <p>TM 153 by segmented flow analyser based on AWWA/APHA 20th Edition - Method 4500</p> <p>TM 222 by ICP-OES</p> <p>TM 019 by Ion Chromatography (IC)</p> <p>TM 136 by HPLC</p> <p>TM 181 by ICP-OES</p> <p>TM 024 by steam distillation and titration</p> <p>TM 133 by automated pH probe</p> <p>TM 018 by gravimetry</p> <p>TM 243 by Kone analyser</p> <p>TM 221 by ICP-OES</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) Sulphide Total Organic Carbon (TOC) Hexavalent Chromium Polynuclear Aromatic Hydrocarbons (PAH): Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(123cd)pyrene Dibenzo(ah)anthracene Benzo(ghi)perylene	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - chemical testing of soil (cont'd) TM 180 by ion selective electrode TM 132 by combustion method TM 151 by Kone analyser TM 218 by solvent extraction and GC-MS



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SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons: Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane Carbon Disulphide Tert-butyl methyl ether Trans-1,2-Dichloroethene 1,1-Dichloroethane Cis-1,2-Dichloroethene Bromochloromethane Chloroform 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon tetrachloride 1,2-Dichloroethane Benzene 1,2-Dichloropropane Dibromomethane Bromodichloromethane Cis-1,3-Dichloropropene Toluene 1,1,2-Trichloroethane 1,3-Dichloropropane Tetrachloroethene Dibromochloromethane 1,2-Dibromoethane Chlorobenzene 1,1,1,2-tetrachloroethane Ethylbenzene o-Xylene 1,2,3-Trichloropropane Propylbenzene 1,3,5-Trimethylbenzene Bromoform Bromobenzene</p>	<p>Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - chemical testing of soil (cont'd)</p> <p>TM 116 by Headspace GC-MS based on USEPA Methods 8240, 8120, 8020, 624, 610 and 602</p>



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SOILS (cont'd)	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons (cont'd): 2-Chlorotoluene 4-Chlorotoluene</p> <p>1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-Chloropropane Naphthalene</p> <p>Gasoline Range Hydrocarbons, Total, in the range >C5 to C12</p> <p>Extractable Petroleum Hydrocarbons (EPH), in the range >C8 to C40</p> <p>Monohydric Phenols: phenol cresols xylenols 2,3,5-trimethyl phenol 2-isopropylphenol Total - Sum of the above 5 Monohydric Phenols</p> <p>PCB congeners: PCB 28 PCB 52 PCB 77 PCB 81 PCB 101 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 138 PCB 153 PCB 156</p>	<p>Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - chemical testing of soil (cont'd)</p> <p>TM 116 by Headspace GC-MS based on USEPA Methods 8240, 8120, 8020, 624, 610 and 602</p> <p>TM 089 Headspace GC-FID based on USEPA Methods 8020 and 602</p> <p>TM 415 by solvent extraction and GCxGC-FID</p> <p>TM 062 by HPLC based on MEWAM Book 124-1988/Second Site Property, March 2003, Method 17.7</p> <p>TM 168 using GC-MS</p>



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SOILS (cont'd)	<u>Chemical Tests</u> (cont'd) PCB congeners (cont'd): PCB 157 PCB 167 PCB 169 PCB 180 PCB 189	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - chemical testing of soil (cont'd) TM 168 using GC-MS
WATERS Potable water (non-regulatory), Ground water, Saline water, treated and untreated sewages and trade effluent	<u>Chemical Tests</u> Hexavalent Chromium	Documented In-House Method TM 241 by Kone Analyser
Groundwater, surface water, Treated sewage effluent and Saline water	Hexavalent Chromium	TM 331 by Discrete Analyser
Surface Water	Gasoline Hydrocarbons: Total in the range >C5-C12, and Benzene Toluene Ethyl Benzene o-xylene m/p-xylene MTBE TAME	TM 245 by Headspace GC-FID based on USEPA Methods 8020 and 602



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<p>WATERS (cont'd)</p> <p>Ground water and Final effluent</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Banded and Total Gasoline Hydrocarbons: Total in the range >C5 - C12 including bands >C6-C8 >C8-C10 >C10-C12 and Benzene Toluene Ethyl Benzene o-xylene m/p-xylene MTBE</p>	<p>Documented In-House Method</p> <p>TM 245 by Headspace GC-FID based on USEPA Methods 8020 and 602</p>
<p>Ground water, surface water, treated and untreated sewages, landfill leachates</p>	<p>Dissolved Metals:</p> <p>Aluminium Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Phosphorus Selenium Silver Sodium Strontium Thallium Tin Titanium Tungsten</p>	<p>TM 152 by ICP-MS with KED</p>



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<p>WATERS (cont'd)</p> <p>Ground water, surface water, treated and untreated sewages, landfill leachates (cont'd)</p> <p>Ground water, surface water, treated and landfill leachates</p> <p>Ground water, surface water, treated and untreated sewages, landfill leachates</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Dissolved Metals (cont'd): Uranium Vanadium Zinc</p> <p>Dissolved Metals: Antimony</p> <p>Total Metals: Aluminium Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Phosphorus Silver Sodium Strontium Thallium Tin Titanium Tungsten Uranium Vanadium Zinc</p>	<p>Documented In-House Method</p> <p>TM 152 by ICP-MS with KED</p> <p>TM 152 by ICP-MS with KED</p> <p>TM 152 by ICP-MS with KED</p>



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Method
Ground water, surface water, treated sewage and landfill leachates	Total Metals: Selenium	TM 152 by ICP-MS with KED
Surface Water, treated sewage effluent and trade effluent	Total Petroleum Hydrocarbons	TM 235 by Infra-red
Potable water (non-regulatory), Ground water, Surface waters and Final effluent	Extractable Petroleum Hydrocarbons C10 - C40	TM 172 by GC-FID
Surface Waters, Ground Waters	Semi-Volatile Organic Compounds (SVOCs), specifically Bis(2-chloroethyl)ether 2-Chlorophenol 1,4-Dichlorobenzene 1,3-Dichlorobenzene 1,2-Dichlorobenzene 2-Methylphenol N-nitrosodi-n-propylamine Hexachloroethane 4-Methylphenol Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Bis(2-chloroethoxy)methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene Hexachlorobutadiene 4-Chloro-3-methylphenol 2-Methylnaphthalene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-Nitroaniline Dimethyl phthalate Acenaphthylene 2,6-Dinitrotoluene	TM 176 by GC-MS



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<p>WATERS (cont'd)</p> <p>Surface Waters, Ground Waters (cont'd)</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Semi-Volatile Organic Compounds (SVOCs), specifically (cont'd)</p> <p>3-Nitroaniline Acenaphthene Dibenzofuran 2,4-Dinitrotoluene Fluorene Diethyl phthalate 4-Chlorophenylphenylether 4-Nitroaniline Azobenzene 4-Bromophenylphenylether Hexachlorobenzene Phenanthrene Anthracene Di-n-butylphthalate Fluoranthene Pyrene Butylbenzylphthalate Benz(a)anthracene Chrysene Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(ghi)perylene</p>	<p>Documented In-House Method</p> <p>TM 176 by GC-MS</p>



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<p>WATERS (cont'd)</p> <p>Surface water, Groundwater Treated and Untreated Sewages, Trade Effluent, Landfill Leachate</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons: Chloromethane Vinyl Chloride Chloroethane Dichloromethane 1,1-dichloroethane tert-butyl methyl ether cis-1,2-dichloroethene bromochloromethane chloroform 1,1,1-trichloroethane 1,1-dichloropropene benzene dibromomethane trichloroethene 1,1,2-trichloroethane toluene 1,3-dichloropropane 1,2-dibromoethane tetrachloroethene chlorobenzene m/p-xylene styrene o-xylene 1,2,3-trichloropropane isopropylbenzene bromobenzene 2-chlorotoluene propylbenzene 4-chlorotoluene n-butylbenzene naphthalene Dichlorofluoromethane Trans-1,2-dichloroethene ethylbenzene 1,2-dichloropropane bromomethane Tert-amyl methyl ether Trichlorofluoromethane 1,1-dichloroethene Carbon disulphide</p>	<p>Documented In-House Method</p> <p>TM 208 by Headspace GC-MS</p>



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<p>WATERS (cont'd)</p> <p>Surface water, Groundwater Sewages, Trade Effluent, Landfill Leachate (cont'd)</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Hydrocarbons: (cont'd) Bromodichlormethane trans-1,3-dichloropropene Dibromchloromethane 1,1,1,2-tetrachloroethane Bromoform 1,3,5-trimethylbenzene Tert-butylbenzene 1,2,4-trimethylbenzene Sec-butylbenzene 4-isopropyltoluene 1,3-dichlorobenzene 1,4-dichlorobenzene 1,2,4-trichlorobenzene 1,2-dichloroethane 1,1,2,2-tetrachloroethane 1,2-dichlorobenzene Cis-1,3-dichloropropene Hexachlorobutadiene 1,2,3-trichlorobenzene</p>	<p>TM 208 by Headspace GC-MS</p>
<p>Groundwater, Surface Water, Landfill Leachate , Treated and Untreated Sewages, Trade Effluents, Saline Waters, Potable Waters (non-regulatory)</p>	<p>pH</p>	<p>TM 256 using a GL pH Meter based on BS 1377:Part 3:1990</p>
<p>Groundwater, Landfill leachate, Treated and Untreated Sewages, Trade Effluents</p>	<p>Dissolved Oxygen</p>	<p>TM 187 by titration (including auto- titrator)</p>
<p>Groundwater, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents</p>	<p>Dissolved Mercury</p>	<p>TM 183 by Cold Vapour Atomic Fluorescence Spectroscopy</p>
<p>Groundwater, Surface Water, Treated and Untreated Sewages, Trade Effluents, Landfill Leachate, Potable Water (non-regulatory), Sea Water</p>	<p>pH Electrical Conductivity</p>	<p>TM 256 by automated robot (Skalar)</p>
<p>Ground Water, Surface Water, Treated and Untreated Sewages, Trade Effluents, Landfill Leachate, Sea Water</p>	<p>Alkalinity</p>	<p>TM 256 by automated robot (Skalar)</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	
Groundwater, Surface Water	Total Dissolved Solids (TDS) By Calculation	TM 256 by automated robot (Skalar)
Ground Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluent, Potable Water (non-regulatory)	Total Mercury	TM 183 by Cold Vapour Atomic Fluorescence Spectroscopy
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Chemical Oxygen Demand (COD) Filtered, settled & total	TM 107, PM210 using Dr Lange Kit,
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Biochemical Oxygen Demand (BOD) Settled & total	TM 045, PM210 based on MEWAM BOD5, 2 nd Edition 1988/AWWA/ APHA, 20 th Edition - Method 5210B
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Anions: Bromide Chloride Fluoride Nitrate Nitrate as N and NO ₃ Nitrite Nitrite as N and NO ₂ Phosphate Sulphate	TM 226 by ion chromatography
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents and Saline water	Alkalinity	TM 043 by titration and auto-titrator based on AWWA/APHA 20 th Edition - Method 2320B/ BS 2690:Part 109:1984 (Ref: BS 2690)



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	
Groundwater, Surface Water, Saline water, Treated and Untreated Sewages, Trade Effluents	Ammonium Ammoniacal Nitrogen as N and NH ₃	TM 099 by Kone Analyser based on BS 2690 Part 7:1968/ BS 6068:Part 2.11:1984
Groundwater, surface water, Untreated Sewage, Treated Sewage, Trade Effluents	Total Inorganic Nitrogen (by calculation)	TM 184 by Kone analyser
Groundwater, Surface Water, Treated and Untreated Sewages, Trade Effluents	<u>Anions:</u> Total Oxidised Nitrogen (TON) TON as N and NO ₃ Chloride	TM 184 by automated discrete analyser (Kone)
Groundwater, Surface Water, Saline Water, Treated and Untreated Sewages, Trade Effluents	Sulphate as S and SO ₄ Phosphate as P and PO ₄ Nitrite as N and NO ₂ Nitrate (calculated) as N & NO ₃	TM 184 by Kone analyser
Saline Water	Total Oxidised Nitrogen (TON) TON as N and NO ₃ Nitrate (calculated) as N & NO ₃	TM 281 by Kone analyser
Groundwater, Surface Waters, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents, Saline water, Potable Water (non-regulatory)	Electrical Conductivity at 20 °C	TM 120 using a Digital Conductivity Meter based on BS 2690:Part 119:1981
Ground water, surface water, Landfill leachate, Untreated Sewage, Treated Sewage, Trade Effluent	Total Nitrogen Calculation of Kjeldahl Nitrogen	TM 212 by Skalar
Groundwater, Surface Water, Treated and Untreated Sewages, Trade Effluents, Saline water, Potable Water (non-regulatory)	Total Suspended Solids	TM 022 by Gravimetric Determination based on BS 2690:Part 120:1981



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ALS Laboratories (UK) Limited
Issue No: 134 Issue date: 31 October 2022

Testing performed at main address only

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Waters (cont'd)	<u>Chemical Tests</u> (cont'd)	
Untreated Sewage, Treated Sewage, Trade Effluent	Total Neutralised Suspended Solids Total Neutralised Suspended Solids (settled) Total Suspended Solids (settled)	TM 022, PM 210
Ground Water, Surface Water, Untreated Sewage, Treated Sewage, Trade Effluent	Volatile suspended solids at 500°C	TM 022 by gravimetry
Ground Water, Surface Water, Untreated Sewage, Treated Sewage, Trade Effluent	Non-volatile suspended solids at 500°C	TM 022 based on BS 2690:1981 part 120
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Total Inorganic Carbon	TM 090 by TOC Analyser
Groundwater, Surface Water	Total Organic Carbon	TM 295 by TOC Analyser
Groundwater, Surface Water, Potable Water (non-regulatory), Landfill Leachate, Treated and Untreated Sewage Effluents	Total Organic Carbon	TM 090 by TOC Analyser
Groundwater, Surface Water, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents,	Total Dissolved Solids	TM 021 by Gravimetric Determination based on BS 2690:Part 121:1981 or TM 123 by conductivity meter



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	
Trade Effluent, Groundwater, Treated and Untreated Sewage, Landfill Leachate	Volatile Fatty Acids: Acetic acid Propionic Acid Isobutyric Acid Butyric Acid Isovaleric Acid Valeric Acid Caproic Acid Heptanoic Acid	TM 201 by GC-FID
Groundwater, Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Monohydric Phenols: Phenol Cresols Xylenols Sum of the above 3 Monohydric phenols	TM 259 by HPLC
Groundwater, Surface Water	Ferrous Iron	TM 125 using colorimetry
Groundwater, Potable Water (non-regulatory), Landfill Leachate, Treated and Untreated Sewages, Trade Effluents	Total Cyanide Easily Liberated (Free) Cyanide Thiocyanate	TM 227 by Segmented Flow Analyser
Ground Water, Surface Water, Landfill Leachate & Trade Effluents	Easily Liberated (Free) Cyanide Total Cyanide	TM 279 by SFA colorimetry
Groundwater, Potable Water (non-regulatory), Treated and Untreated Sewages, Trade Effluents,	Fluoride	TM 104 by Kone Analyser
Groundwater, Potable Water (non-regulatory), Saline Water, Treated and Untreated Sewages, Trade Effluents	Sulphide	TM 101 by automated discrete analyser (KONE)



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<p>WATERS (cont'd)</p> <p>Surface Water, Ground Water, Saline Water</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Polynuclear Aromatic Hydrocarbons (PAH's): Naphthalene^{1,2} Acenaphthylene² Acenaphthene² Fluorene² Phenanthrene^{1,2} Anthracene^{1,2} Fluoranthene^{1,2} Pyrene² Benz(a)anthracene^{1,2} Chrysene^{1,2} Benzo(b)fluoranthene² Benzo(k)fluoranthene^{1,2} Benzo(a)pyrene^{1,2} Indeno(1,2,3-cd)pyrene^{1,2} Dibenzo(a,h)anthracene² Benzo(g,h,i)perylene^{1,2} Sum of "Dutch 10" PAHs (annotated ¹) Sum of "EPA 16" PAHs (annotated ²)</p>	<p>TM 178 by GC-MS</p>
<p>Surface and Saline waters</p>	<p>Volatile Hydrocarbons: Vinyl Chloride 1,1,1,2-tetrachloroethane 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloropropane</p>	<p>TM 265 by Headspace GC-MS</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	
Surface and Saline waters (cont'd)	Volatile Hydrocarbons: (cont'd) 1,3,5-Trimethylbenzene 1,3-Dichlorobenzene 1,3-Dichloropropane 1,4-Dichlorobenzene 2-Chlorotoluene 4-Chlorotoluene 4-Isopropyltoluene Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Carbon tetrachloride Chlorobenzene Chloroethane Cis-1,2-Dichloroethene Cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Ethylbenzene Hexachlorobutadiene Isopropylbenzene Naphthalene n-Butylbenzene o-Xylene p/m-Xylene Propylbenzene Sec-Butylbenzene Styrene Tert-Butylbenzene Tetrachloroethene Toluene Trans-1,2-Dichloroethene Trans-1,3-Dichloropropene Trichloroethene Trichlorofluoromethane	TM 265 by Headspace GC-MS
Surface, Ground and Saline waters	Di (2-ethylhexyl) phthalate DEHP	TM 423 by GC-MS



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<p>WATERS (cont'd)</p> <p>Surface, Ground and Saline waters</p> <p>WATERS & WASTE WATERS</p> <p>Groundwater, surface Water, Untreated sewage, Treated Sewage & Trade Effluent</p> <p>Untreated Sewage, Treated Sewage, Trade Effluent</p> <p>Untreated Sewage, Treated Sewage, Trade Effluent</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Hexabromocyclododecane (HBCDD)</p> <p>Cypermethrin</p> <p><u>Chemical Testing</u></p> <p>Turbidity</p> <p>Dissolved Metals, specifically: Aluminium Arsenic Cadmium Chromium Cobalt Copper Iron Lead Nickel Phosphorus Selenium Zinc</p> <p>Total Metals, specifically: Aluminium Arsenic Cadmium Chromium Cobalt Copper Iron Lead Nickel Phosphorus Zinc</p>	<p>TM 421 by LC-MS-MS</p> <p>TM 422 by LC-MS-MS</p> <p>TM 195 by nephelometry</p> <p>TM 377 by ICP-MS with Kinetic Energy Discrimination (KED)</p> <p>TM 377 by ICP-MS with Kinetic Energy Discrimination (KED)</p>



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<p>WATERS & WASTE WATERS (cont'd)</p> <p>Groundwater, Surface Water and Treated Sewage Effluent</p>	<p><u>Chemical Testing</u> (cont'd)</p> <p>Perfluorinated substances (PFAS): Perfluoro-n-butanoic acid Perfluoro-n-pentanoic acid Perfluoro-n-hexanoic acid Perfluoro-n-butanedisulfonate Perfluoro-n-heptanoic acid 6:2 fluorotelomer sulfonate Perfluoro-n-pentadisulfonate Perfluoro-n-octanoic acid Perfluoro-n-hexadisulfonate Perfluoro-n-nonanoic acid Perfluoro-n-heptadisulfonate Perfluoro-n-decanoic acid Perfluoro-n-octadisulfonate -linear Perfluorooctane sulfonate-branched Perfluoro-n-undecanoic acid Perfluoro-n-dodecanoic acid Perfluorooctanesulfonamide</p> <p>Total PFOS (linear & Branched)</p>	<p>TM 337 by LC-MS/MS</p>
<p>Surface water & Groundwater</p>	<p>Poly & Perfluorinated Alkyl Substances (PFAS): PFBA PFMOPrA 3:3FTCA PFPeA PFMOBA 4:2FTS NFDHA PFBS PFHxA HFPO-DA PFEESA PFHpA PFPeS 5:3FTCA ADONA 6:2FTS FBSA PFOA PFHxS PFNA</p>	<p>TM 434 by SPE & LC-MS/MS</p>



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<p>WATERS & WASTE WATERS</p> <p>Surface water & Groundwater</p>	<p><u>Chemical Testing</u></p> <p>Poly & Perfluorinated Alkyl Substances (PFAS) – cont'd:</p> <p>PFecHS PFHpS 8:2FTS HFPO-TA 7:3FTCA PFDA MeFOSAA PFOS EtFOSAA FHxSA PUnA 9Cl-PF3ONS PFNS PFDoA PFDS PFTTrDA 11Cl-PF3OUdS PFOSA PFUndS PFTeA PFDoS PFTTrDS MeFOSE PFHxDA N-MeFOSA EtFOSE N-EtFOSA PFODA</p>	<p>TM 434 by SPE & LC-MSMS</p>



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<p>WASTE WATERS</p> <p>Trade Effluent, Untreated Sewage and Treated Sewage Effluent (cont'd)</p>	<p><u>Chemical Testing</u> (cont'd)</p> <p>Total Suspended Solids</p> <p>Ammonia Ammoniacal Nitrogen as N and NH₃</p> <p>pH</p> <p>Chemical Oxygen Demand (COD)</p> <p>Biochemical Oxygen Demand (BOD)</p> <p>Total Nitrogen</p> <p>Anions: Bromide Chloride Fluoride Nitrate Nitrate as N and NO₃ Nitrite Nitrite as N and NO₂ Total Oxidised Nitrogen (TON) as N Phosphate Sulphate</p>	<p>Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - sampling and chemical testing of untreated sewage, treated sewage effluents and trade effluents</p> <p>TM 022 by Gravimetry</p> <p>TM 099 by discrete colorimetric analyser</p> <p>TM 256 by pH meter & by Automated Robot (Skalar)</p> <p>TM 107 by tube test</p> <p>TM 045 by DO meter</p> <p>TM 212 by Skalar</p> <p>TM 226 by Ion Chromatography</p>



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>WASTE WATERS (cont'd)</p> <p>Trade Effluent, Untreated Sewage and Treated Sewage Effluent (cont'd)</p>	<p><u>Chemical Testing</u> (cont'd)</p> <p>Total Metals, specifically: Aluminium Arsenic Cadmium Chromium Cobalt Copper Iron Lead Nickel Phosphorus Zinc</p> <p>Dissolved Metals, specifically: Aluminium Arsenic Cadmium Chromium Cobalt Copper Iron Lead Nickel Phosphorus Selenium Zinc</p>	<p>Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard - sampling and chemical testing of untreated sewage, treated sewage effluents and trade effluents</p> <p>TM 377 by ICP-MS with Kinetic Energy Discrimination (KED)</p> <p>TM 377 by ICP-MS with Kinetic Energy Discrimination (KED)</p>
<p>END</p>		

L.3 Schedules

Title	Reference
Schedule of Geoenvironmental Laboratory Soil Testing	L.3.1
L.3.2 Schedule of Geoenvironmental Laboratory Water Testing	L.3.2

L.3.1 Schedule of Geoenvironmental Laboratory Soil Testing

Location	ES Sample	Date sampled	Suite E (General)	Suite F (TPH CWG)	Suite G (SVOC/VOC)	Suite H (Pest/Herbs)	Suite I (Asb ID)	ASB Q	Suite J (PCBs)	Suite K (Leachate)	CHoC Number	SDG Report No.
MAIN SITE												
MS-BH01	ES 1, 4	26/08/2022	2	1	1		1				F-OP3LTB-87TJ	220906-23
MS-BH02	ES 2, 9, 10	30/08/2022	3	1	1		2				F-OE1TTB-52JL	220906-17
MS-BH03	ES 1, 4, 8	25/08/2022	2	1		1	2		1		F-SYJTB-Z90W	220906-19
MS-BH04	ES 1, 4, 7, 10	13/09/2022 & 14/09/2022	4	1	1		4				F-QT8MUB-A9Q8	220917-85
MS-BH05	ES 1, 4, 7	06/09/2022	3	1	1	1	2			2	F-S806UB-8S6O	220913-82
MS-BH06	ES 2, 5, 7	01/09/2022	3	1	1					1	F-9P9WTB-XB6P	220906-15
MS-BH07	ES 1, 12	23/08/2022	2	1	1	1	1				F-48EHTB-H26Y	220906-24
MS-BH08	ES, 2, 4, 8	09/09/2022	3	1	1	1	2			1	F-JFPGUB-0C9M	220917-33
MS-BH09	ES 1, 4, 7, 9	15/09/2022	3	1	1	1	3			1	F-TG7MUB-9M99	220924-23
MS-BH10	ES 2, 4, 7, 9	21/09/2022	3	1	1		3		1	1	F-CUIVUB-KUE7	220927-22
MS-BH11	ES 2, 6,	21/09/2022	2	1	1		2				F-8P4XUB-NPBF	220927-23
MS-BH12	ES 1, 4, 7	14/09/2022	3				2				F-6R4MUB-NCO2	220917-84

Location	ES Sample	Date sampled	Suite E (General)	Suite F (TPH CWG)	Suite G (SVOC/VOC)	Suite H (Pest/Herbs)	Suite I (Asb ID)	ASB Q	Suite J (PCBs)	Suite K (Leachate)	CHoC Number	SDG Report No.
MS-BH13	ES 4, 5, 8	04/10/2022	3			1			1		F-AR10WB-UI0T	221018-45
MS-BH14	ES 6, 9, 12	23/08/2022	3	1	1		3			2	F-20DHTB-XS8D	220906-18
MS-BH15	ES 4, 9	13/09/2022	2				2				F-P8NIUB-XMUM	220927-26
MS-BH16	ES 2, 4, 7	25/08/2022	2			1	2			1	F-Y4IJTB-3KL9	220906-20
MS-BH16	ES 16	26/08/2022	1	1	1						F-CQ0LTB-3ISW	220906-21
MS-BH17	ES 7, 10, 14	15/09/2022	3				2				F-Q32ZUB-9A0I	220924-22
MS-BH17	ES 4	15/09/2022	1				1	1			F-91BXUB-JVIR	220927-24
MS-BH18	ES 4, 8	06/10/2022	2				2				F-AR10WB-UI0T	221018-45
MS-BH19	ES 1, 4, 10	12/09/2022	3	1	1	1	1				F-DYFIUB-WX7R	220917-34
MS-BH20	ES 1, 7	08/09/2022	2				2				F-H1D9UB-KSRC	220913-83
MS-BH21	ES 1, 4, 7	31/08/2022	2			1	1			1	F-MDXUTB-62DZ	220906-16
MS-BH22	ES 7	28/09/2022	1	1							F-HJVDVB-SIQ0	221003-12
MS-BH23	ES 2, 4, 10	30/09/2022	2			1	1		1		F-LKRWVB-CBIN	221013-36
MS-BH24	ES 4, 8	10/10/2022	2				1		1		F-78TWVB-G0G9	221013-33

Location	ES Sample	Date sampled	Suite E (General)	Suite F (TPH CWG)	Suite G (SVOC/VOC)	Suite H (Pest/Herbs)	Suite I (Asb ID)	ASB Q	Suite J (PCBs)	Suite K (Leachate)	CHoC Number	SDG Report No.
MS-BH25	ES 5, 9, 10, 13	26/09/2022	3			1	3	1	1		F-Y8SDVB-BLAV	221005-86
MS-BH25	ES 21, 24	27/09/2022	2	1	1						F-7NXWVB-20H1	221018-44
ASH TIP												
BH101	ES 1, 12, 18	21/09/2022	3	1			2				F-UA8ZUB-ENTK	220927-27
BH101	ES 27	21/09/2022	1				1				F-9OP6VB-XHCZ	220930-150
BH102	ES 6, 28, 36	27/09/2022 & 28/09/2022	3				3			2	F-WYM8VB-O2MV	220930-153
BH103	ES 8, 21	29/09/2022	2				2	1			F-ZY2EVb-7EJI	221005-84
BH103	ES 25, 48	29/09/2022 & 30/09/2022	2				1				F-MSEPVB-8VHV	221013-29
BH104	ES 12, 16, 24	06/10/2022	3				2				F-E1V1WB-X5CM	221018-50
BH105	ES 8, 14, 18	05/10/2022	3				2			1	F-G6PWVB-F4JJ	221013-34
BH106	ES 4	21/10/2022	1				1				F-LAUGWB-VWJ9	221027-112
BH106	ES 9, 13, 21	21/10/2022	3	1			3				F-TLQMWB-3UZN	221027-113
DS101	ES 5, 8	29/09/2022	2				2			1	F-ZCYWVB-9EDG	221013-23
DS101	ES 110, 112	01/11/2022	2				2				F-57N1XB-HXKJ	221103-55

Location	ES Sample	Date sampled	Suite E (General)	Suite F (TPH CWG)	Suite G (SVOC/VOC)	Suite H (Pest/Herbs)	Suite I (Asb ID)	ASB Q	Suite J (PCBs)	Suite K (Leachate)	CHoC Number	SDG Report No.
DS103	ES 5	29/09/2022	1				1				F-810XVB-N1BJ	221013-24
DS103	ES 12	29/09/2022	1				1				F-1Y50WB-L5GO	221018-41
DS105	ES 7	30/09/2022	1				1				F-HSXDVB-Z6J0	221005-85
DS105	ES 9, 11	28/09/2022	2	1			2			1	F-I95EVB-JBFW	221006-100
DS106	ES 2	30/09/2022	1				1				F-DQ1EVB-HLOZ	221005-89
DS106	ES 10, 12	28/09/2022	2				1				F-H2DNVB-C32S	221013-42
DS107	ES 10	27/09/2022	1								F-C49LVB-MCLF	221013-44
DS107	ES 12	04/10/2022	1				1				F-QHYOVB-PRCN	221013-30
DS107	ES 8	27/09/2022	1								F-NG40WB-O8DC	221018-40
DS108	ES 4	29/09/2022	1								F-SOZJVB-55HH	221013-41
DS108	ES 10	29/09/2022	1				1			1	F-7YFPVB-DHU6	221013-28
DS108	ES 11	29/09/2022	1				1				F-ZK1XVB-HFZC	221013-25
DS109	ES 8	23/09/2022	1				1				F-MOOKVB-V28L	221006-101
DS110	ES 10	29/09/2022	1				1				F-7YFPVB-DHU6	221013-28

Location	ES Sample	Date sampled	Suite E (General)	Suite F (TPH CWG)	Suite G (SVOC/VOC)	Suite H (Pest/Herbs)	Suite I (Asb ID)	ASB Q	Suite J (PCBs)	Suite K (Leachate)	CHoC Number	SDG Report No.
DS110	ES 4, 7	28/09/2022	2	1			1				F-QWHPVB-D RTP	221013-31
DS111	ES 9	29/09/2022	1				1			1	F-7YFPVB-DHU6	221013-28
DS111	ES9	29/09/2022	1				1			1	F-QHYOVB-PRCN	221013-30
DS111	ES 12	29/09/2022	1				1				F-YOZWVB-1MKV	221013-21
ACCESS ROADS												
AR-BH01	ES 2, 4, 5	21/09/2022	2				2				F-TC61VB-2B23	220927-21
AR-BH02	ES 5, 11	12/10/2022	2			2					F-E1V1WB-X5CM	221018-50
HR-BH01	ES 2, 5, 7	27/10/2022	2			1	2				F-ICOTWB-RIHG	221103-45
		Totals	119	20	14	14	86	3	6	18		

L.3.2 Schedule of Geoenvironmental Laboratory Water Testing

Location	EW Sample	Date sampled	BRE SO4	Suite L (General)	Suite M (TPH CWG)	Suite N (SVOC/VOC)	Suite O (Herbs/Pests)	Suite P (PCBs)	Water trip blank (BTEX/MTBE)	CHoC Number	SDG Report No.
MAIN SITE											
MS-BH01	EW1	16/11/2022		1	1	1	1			F-MNSUXB-WJKK	221118-151
MS-BH01	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH01	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH02	EW1	14/11/2022	1	1	1	1				F-TY2RXB-LF4Z	221118-120
MS-BH02	EW3	28/11/2022		1						F-94YGYB-IJCW	221203-31
MS-BH02	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH03	EW1	17/11/2022		1	1	1		1		F-YETWXB-EI9O	221119-41
MS-BH03	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH03	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH05	EW1	16/11/2022		1						F-MNSUXB-WJKK	221118-151
MS-BH05	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH05	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH07	EW1	17/11/2022		1	1		1			F-YETWXB-EI9O	221119-41
MS-BH07	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
MS-BH07	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
MS-BH09	EW1	16/11/2022		1	1	1	1			F-MNSUXB-WJKK	221118-151
MS-BH09	EW3	28/11/2022		1						F-94YGYB-IJCW	221203-31
MS-BH09	EW5	12/12/2022		1						F-YI07ZB-RY39	221217-28
MS-BH10	EW1	17/11/2022		1	1	1				F-YETWXB-EI9O	221119-41
MS-BH10	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30

Location	EW Sample	Date sampled	BRE SO4	Suite L (General)	Suite M (TPH CWG)	Suite N (SVOC/VOC)	Suite O (Herbs/Pests)	Suite P (PCBs)	Water trip blank (BTEX/MTBE)	CHoC Number	SDG Report No.
MS-BH10	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH12	EW1	17/11/2022		1	1		1			F-YETWXB-EI9O	221119-41
MS-BH12	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH12	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
MS-BH13	EW1	17/11/2022		1	1	1		1		F-YETWXB-EI9O	221119-41
MS-BH13	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH13	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
MS-BH17	EW1	17/11/2022		1	1		1			F-YETWXB-EI9O	221119-41
MS-BH17	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
MS-BH17	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
MS-BH19	EW1	14/11/2022	1	1	1					F-TY2RXB-LF4Z	221118-120
MS-BH19	EW3	28/11/2022		1						F-94YGYB-IJCW	221203-31
MS-BH19	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH20	EW1	17/11/2022		1	1	1				F-YETWXB-EI9O	221119-41
MS-BH20	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH20	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH21	EW1	16/11/2022		1	1					F-MNSUXB-WJKK	221118-151
MS-BH21	EW3	29/11/2022		1						F-R9WHYB-2NJ5	221203-30
MS-BH21	EW5	13/12/2022		1						F-QUU7ZB-KRW2	221217-29
MS-BH23	EW1	17/11/2022		1			1	1		F-YETWXB-EI9O	221119-41
MS-BH23	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
MS-BH23	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30

Location	EW Sample	Date sampled	BRE SO4	Suite L (General)	Suite M (TPH CWG)	Suite N (SVOC/VOC)	Suite O (Herbs/Pests)	Suite P (PCBs)	Water trip blank (BTEX/MTBE)	CHoC Number	SDG Report No.
MS-BH25	EW1	18/11/2022		1	1	1				F-TZTWXB-SELS	221119-43
MS-BH25	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
MS-BH25	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
DUP-BH01	EW1	14/11/2022		1	1					F-TY2RXB-LF4Z	221118-120
DUP-BH01	EW3	28/11/2022		1						F-94YGYB-IJCW	221203-31
DUP-BH01	EW5	12/12/2022		1						F-YI07ZB-RY39	221217-28
DUP-BH02	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
DUP-BH03	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
DUP-BH04	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
ASH TIP											
BH101	EW1	15/11/2022		1						T71TXB-K05X	221118-116
BH101	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
BH101	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
BH102	EW1	15/11/2022		1	1					T71TXB-K05X	221118-116
BH102	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
BH102	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
BH103	EW1	15/11/2022		1		1				T71TXB-K05X	221118-116
BH103	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
BH103	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
BH104	EW1	15/11/2022		1	1					T71TXB-K05X	221118-116
BH104	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
BH104	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24

Location	EW Sample	Date sampled	BRE SO4	Suite L (General)	Suite M (TPH CWG)	Suite N (SVOC/VOC)	Suite O (Herbs/Pests)	Suite P (PCBs)	Water trip blank (BTEX/MTBE)	CHoC Number	SDG Report No.
DS111	EW1	15/11/2022		1						T71TXB-K05X	221118-116
DS111	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
DS111	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
DUP-BH02	EW1	15/11/2022		1						T71TXB-K05X	221118-116
DUP-BH03	EW3	30/11/2022		0						F-8JUJYB-3DO7	221203-29
ACCESS ROADS											
AR-BH01	EW1	16/11/2022		1	1	1				F-MNSUXB-WJJK	221118-151
AR-BH01	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
AR-BH01	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
AR-BH02	EW1	16/11/2022		1	1	1	1			F-MNSUXB-WJJK	221118-151
AR-BH02	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
AR-BH02	EW5	14/12/2022		1						F-WMLAZB-RO8Z	221217-30
HR-BH01	EW1	18/11/2022		1	1	1				F-TZTWXB-SELS	221119-43
HR-BH01	EW3	01/12/2022		1						F-Q2NMYB-AUIR	221203-33
HR-BH01	EW5	15/12/2022		1						F-Y0HCZB-IFQY	221217-24
SURFACE WATER DITCH											
SWD102	EW1	16/11/2022		1	1	1				F-MNSUXB-WJJK	221118-151
SWD102	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
SWD104	EW1	16/11/2022		1	1					F-MNSUXB-WJJK	221118-151
SWD104	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
SWD105	EW1	16/11/2022		1	1					F-MNSUXB-WJJK	221118-151
SWD105	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29

Location	EW Sample	Date sampled	BRE SO4	Suite L (General)	Suite M (TPH CWG)	Suite N (SVOC/VOC)	Suite O (Herbs/Pests)	Suite P (PCBs)	Water trip blank (BTEX/MTBE)	CHoC Number	SDG Report No.
SWD106	EW1	16/11/2022		1						F-MNSUXB-WJJK	221118-151
SWD106	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
SWD107	EW1	18/11/2022		1	1	1				F-TZTWXB-SELS	221119-43
SWD107	EW3	30/11/2022		1						F-8JUJYB-3DO7	221203-29
DUP-BH02	EW3	30/11/2022		0						F-8JUJYB-3DO7	221203-29
VOC Vials											
Tripblank 1	EW3	01/12/2022							0	F-Q2NMYB-AUIR	221203-33
Tripblank 1	EW5	15/12/2022							1	F-22OCZB-GUFZ	221218-10
Tripblank 2	EW3	01/12/2022							0	F-Q2NMYB-AUIR	221203-33
Tripblank 2	EW5	15/12/2022							1	F-22OCZB-GUFZ	221218-10
Tripblank-1	EW1	18/11/2022							1	F-TZTWXB-SELS	221119-43
Tripblank-2	EW1	18/11/2022							1	F-TZTWXB-SELS	221119-43
		Totals	2	86	23	14	7	3	4		

Location	Comments
DUP-BH01	Duplicate of MS-BH19
DUP-BH01	Duplicate of MS-BH09
DUP-BH01	Duplicate of MS-BH09
DUP-BH02	Duplicate of BH101
DUP-BH02	Duplicate of SWD107: Not tested
DUP-BH02	Duplicate of MS-BH23

Location	Comments
DUP-BH03	Duplicate of BH101: Not tested
DUP-BH03	Duplicate of MS-BH25
DUP-BH04	Duplicate of MS-BH23
Tripblank 1	Not tested
Tripblank 2	Not tested

L.4 Test Certificates

Certificate Number (Analyses on Soil Samples)

220906-15	220924-22	221006-100	221013-36
220906-16	220924-23	221006-101	221013-41
220906-17	220927-21	221013-21	221013-42
220906-18	220927-22	221013-23	221013-44
220906-19	220927-23	221013-24	221018-40
220906-20	220927-24	221013-25	221018-41
220906-21	220927-26	221013-28	221018-44
220906-23	220927-27	221013-28	221018-45
220906-24	220930-150	221013-28	221018-45
220913-82	220930-153	221013-29	221018-50
220913-83	221003-12	221013-30	221018-50
220917-33	221005-84	221013-30	221027-112
220917-34	221005-85	221013-31	221027-113
220917-84	221005-86	221013-33	221103-45
220917-85	221005-89	221013-34	221103-55

Certificate Number (Analyses on Groundwater Samples)

221118-116	221119-41	221118-120	221119-43
221118-151	221203-29	221203-30	221203-31
221203-33	221218-10	221217-24	221217-29
221217-28	221217-30		



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 21 September 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220906-15
Your Reference: F212561
Location: Keadby 3
Report No: 661970
Order Number: 386/121917/CP

This report has been revised and directly supersedes 661534 in its entirety.

We received 4 samples on Friday September 02, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 21, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

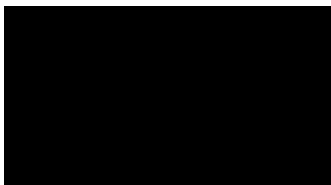
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26830947	MS-BH06	ES2	0.10 - 0.10	01/09/2022
26830955	MS-BH06	ES5	0.50 - 0.50	01/09/2022
26830962	MS-BH06	ES7	0.90 - 0.90	01/09/2022
26830969	MS-BH06	ES9	1.20 - 1.20	01/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26830947	MS-BH06	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	S
		26830955	MS-BH06	ES5	0.50 - 0.50	1kg TUB with Handle (ALE260)	S
		26830962	MS-BH06	ES7	0.90 - 0.90	250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						Tube for ICP MS	S
Ammonium Low	All	NDPs: 1 Tests: 1					
					N		
					X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
			X		X		
						X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
			X		X		
						X	
Anions by Kone (w)	All	NDPs: 1 Tests: 1					
					N		
					X		
CEN Readings	All	NDPs: 2 Tests: 1					
					N		
					X		
Chromium III	All	NDPs: 1 Tests: 4					
			X		N		
					X		
					X		
					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
			X		X		
						X	
Dissolved Metals by ICP-MS	All	NDPs: 1 Tests: 1					
					N		
					X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
			X		X		
						X	
Elemental Sulphur	All	NDPs: 0 Tests: 3					
			X		X		
						X	
EPH	All	NDPs: 0 Tests: 3					
			X		X		
						X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
			X		X		
						X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
						X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
						X	
			X		X		
						X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
			X		X		
						X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					26830947	26830955	26830962	
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other								
Low Level Cyanide (W)	All	NDPs: 1 Tests: 1						
Low Level Hexavalent Chromium (w)	All	NDPs: 1 Tests: 1						
Mercury Dissolved	All	NDPs: 1 Tests: 1						
Metals in solid samples by OES	All	NDPs: 0 Tests: 3						
Nitrite by Kone (w)	All	NDPs: 1 Tests: 1						
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3						
PAH by GCMS	All	NDPs: 0 Tests: 3						
PAH Spec MS - Aqueous (W)	All	NDPs: 1 Tests: 1						
pH	All	NDPs: 0 Tests: 3						
pH Value of Filtered Water	All	NDPs: 1 Tests: 1						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3						
Sample description	All	NDPs: 0 Tests: 3						
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1						
Total Organic and Inorganic Carbon	All	NDPs: 1 Tests: 1						
Total Organic Carbon	All	NDPs: 0 Tests: 3						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	
	26830947	MS-BH06	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	
	26830955	MS-BH06	ES5	0.50 - 0.50	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	
	26830962	MS-BH06	ES7	0.90 - 0.90	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	
Total Sulphate	All				NDPs: 0 Tests: 3			
							X	
TPH CWG GC (S)	All				NDPs: 0 Tests: 1			
							X	
VOC MS (S)	All				NDPs: 0 Tests: 3			
						X		
						X		
							X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26830947	MS-BH06	0.10 - 0.10	Light Brown	Sandy Clay Loam	Stones	Vegetation
26830955	MS-BH06	0.50 - 0.50	Light Brown	Sandy Clay Loam	Vegetation	None
26830962	MS-BH06	0.90 - 0.90	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Results Legend		Customer Sample Ref.		MS-BH06	MS-BH06	MS-BH06			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.flit Dissolved / filtered sample. tot.unflit Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		F-VS9WTB-2D20 0.10 - 0.10 Soil/Solid (S) 01/09/2022 09:05 02/09/2022 220906-15 26830947 ES2	F-0AAWTB-LR5V 0.50 - 0.50 Soil/Solid (S) 01/09/2022 09:17 02/09/2022 220906-15 26830955 ES5	F-C1BWTB-BSC2 0.90 - 0.90 Soil/Solid (S) 01/09/2022 09:30 02/09/2022 220906-15 26830962 ES7			
Component	LOD/Units	Method							
Moisture Content Ratio (% of as received sample)	%	PM024	8.8		31	15			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M	<15	M	<15	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	<12	M	<12	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	0.0145	M	<0.01	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M	<0.035	M	<0.035	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	5.22	#	15.9	#	1.09	#	
pH	1 pH Units	TM133	8.19	M	7.98	M	8.24	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	M	<10	M	<10	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M	<0.6	M	<0.6	M	
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M	
Cyanide, Free	<1 mg/kg	TM153	<1	M	<1	M	<1	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M	<15	@ M	<15	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	20.4		15.4		7.24		
Arsenic	<0.6 mg/kg	TM181	18	M	13.9	M	1.54	M	
Boron	<0.7 mg/kg	TM181	18.1	#	16.6	#	2.42	#	
Cadmium	<0.02 mg/kg	TM181	0.263	M	0.19	M	<0.02	M	
Chromium	<0.9 mg/kg	TM181	20.4	M	15.4	M	7.24	M	
Copper	<1.4 mg/kg	TM181	21.2	M	15.7	M	4.96	M	
Iron	<1000 mg/kg	TM181	33100	#	28100	#	5760	#	
Lead	<0.7 mg/kg	TM181	86	M	61.4	M	9.58	M	
Mercury	<0.1 mg/kg	TM181	<0.1	M	<0.1	M	<0.1	M	
Nickel	<0.2 mg/kg	TM181	31.5	M	23.4	M	7.31	M	
Selenium	<1 mg/kg	TM181	1.21	#	1.07	#	<1	#	
Zinc	<1.9 mg/kg	TM181	117	M	79.6	M	17.6	M	
Sulphate, Total	<48 mg/kg	TM221	554	M	647	M	70.6	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.0185		0.0216		0.00235		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	5.04		4.63		0.15		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0501	M	<0.004	M	<0.004	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	9.41		17.7		3.33		
EPH (C5-C40)	<35 mg/kg	TM415	<35		385		<35		
EPH Surrogate % recovery**	%	TM415	94.1		101		104		



CERTIFICATE OF ANALYSIS

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Results Legend		Customer Sample Ref.	MS-BH06	MS-BH06	MS-BH06			
#	ISO17025 accredited.	MS-BH06	F-VS9WTB-2D20	F-0AAWTB-LR5V	F-C1BWTB-B5C2			
M	mCERTS accredited.	F-VS9WTB-2D20	0.10 - 0.10	0.50 - 0.50	0.90 - 0.90			
sq	Aqueous / settled sample.	0.10 - 0.10	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
dis.filt	Dissolved / filtered sample.	01/09/2022	01/09/2022	01/09/2022	01/09/2022			
tot.unfilt	Total / unfiltered sample.	09:05	09:17	09:30	09:30			
*	Subcontracted - refer to subcontractor report for accreditation status.	02/09/2022	02/09/2022	02/09/2022	02/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	220906-15	220906-15	220906-15	220906-15			
(F)	Trigger breach confirmed	26830947	26830955	26830962	26830962			
1-4*§	Sample deviation (see appendix)	ES2	ES5	ES7	ES7			
Component	LOD/Units	Method						
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	385	<35			
			M	M	M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH06	MS-BH06	MS-BH06		
#	ISO17025 accredited.		F-VS9WTB-2D20	F-0AAWTB-LR5V	F-C1BWTB-B5C2		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.90 - 0.90		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	01/09/2022	01/09/2022	01/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:05	09:17	09:30		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-15	220906-15	220906-15		
	(F) Trigger breach confirmed	SDG Ref	26830947	26830955	26830962		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES5	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	90.9	90.7	91		
Acenaphthene-d10 % recovery**	%	TM218	95	91.7	92.5		
Phenanthrene-d10 % recovery**	%	TM218	101	89.6	94.8		
Chrysene-d12 % recovery**	%	TM218	96.7	70.3	88.5		
Perylene-d12 % recovery**	%	TM218	94.4	71.7	87.9		
Naphthalene	<9 µg/kg	TM218	17.4	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	30.3	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	21.2	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	267	<15	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	62.5	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	412	<17	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	355	<15	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	152	<14	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	163	<10	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	188	<15	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	64.6	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	122	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	86.4	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	83.3	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	2020	<118	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH06 F-C1BWTB-B5C2 0.90 - 0.90 Soil/Solid (S) 01/09/2022 09:30 02/09/2022 220906-15 26830962 ES7			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4*\$@ Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		MS-BH06 F-C18WTB-B5C2 0.90 - 0.90 Soil/Solid (S) 01/09/2022 09:30 02/09/2022 220906-15 26830962 ES7			
Component	LOD/Units	Method	Result				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

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SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

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TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH06							
M mCERTS accredited.		F-C1BWTB-B5C2							
aq Aqueous / settled sample.		0.90 - 0.90							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		01/09/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		09:30							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		02/09/2022							
(F) Trigger breach confirmed		220906-15							
1-4* @ Sample deviation (see appendix)		26830962							
		ES7							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	95.8						
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	6130	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	6920						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	17700						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1220	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	4930	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	4530						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	10800						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	17700						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50						
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH06	MS-BH06	MS-BH06		
#	ISO17025 accredited.		F-VS9WTB-2D20	F-0AAWTB-LR5V	F-C1BWTB-BSC2		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.90 - 0.90		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	01/09/2022	01/09/2022	01/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:05	09:17	09:30		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-15	220906-15	220906-15		
(F)	Trigger breach confirmed	SDG Ref	26830947	26830955	26830962		
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES5	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	111	115	113		
Toluene-d8**	%	TM116	96.7	95.5	93.8		
4-Bromofluorobenzene**	%	TM116	93.4	87.3	78.8		
Dichlorodifluoromethane	<6 µg/kg	TM116			<6	#	
Chloromethane	<7 µg/kg	TM116			<7	#	
Vinyl Chloride	<6 µg/kg	TM116			<6	@ M	
Bromomethane	<10 µg/kg	TM116			<10	M	
Chloroethane	<10 µg/kg	TM116			<10	M	
Trichlorofluoromethane	<6 µg/kg	TM116			<6	M	
1,1-Dichloroethene	<10 µg/kg	TM116			<10	#	
Carbon Disulphide	<7 µg/kg	TM116			<7	M	
Dichloromethane	<10 µg/kg	TM116			<40	#	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<200	<10	M	
trans-1,2-Dichloroethene	<10 µg/kg	TM116			<10	M	
1,1-Dichloroethane	<8 µg/kg	TM116			<8	M	
cis-1,2-Dichloroethene	<6 µg/kg	TM116			<6	M	
2,2-Dichloropropane	<10 µg/kg	TM116			<10		
Bromochloromethane	<10 µg/kg	TM116			<10	M	
Chloroform	<8 µg/kg	TM116			<8	M	
1,1,1-Trichloroethane	<7 µg/kg	TM116			<7	M	
1,1-Dichloropropene	<10 µg/kg	TM116			<10	M	
Carbontetrachloride	<10 µg/kg	TM116			<10	M	
1,2-Dichloroethane	<5 µg/kg	TM116			<5	M	
Benzene	<9 µg/kg	TM116	<180	<180	<9	M	
Trichloroethene	<9 µg/kg	TM116			<9	#	
1,2-Dichloropropane	<10 µg/kg	TM116			<10	M	
Dibromomethane	<9 µg/kg	TM116			<9	M	
Bromodichloromethane	<7 µg/kg	TM116			<7	M	
cis-1,3-Dichloropropene	<10 µg/kg	TM116			<10	M	
Toluene	<7 µg/kg	TM116	<140	<140	<7	M	
trans-1,3-Dichloropropene	<10 µg/kg	TM116			<10		
1,1,2-Trichloroethane	<10 µg/kg	TM116			<10	M	
1,3-Dichloropropane	<7 µg/kg	TM116			<7	M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH06	MS-BH06	MS-BH06			
#	ISO17025 accredited.		F-VS9WTB-2D20	F-0AAWTB-LR5V	F-C1BWTB-B5C2			
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.90 - 0.90			
aq	Aqueous / filtered sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
dis.filt	Dissolved / filtered sample.	Sample Type	01/09/2022	01/09/2022	01/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:05	09:17	09:30			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-15	220906-15	220906-15			
(F)	Trigger breach confirmed	SDG Ref	26830947	26830955	26830962			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES5	ES7			
		AGS Reference						
Component	LOD/Units	Method						
Tetrachloroethene	<5 µg/kg	TM116			<5			M
Dibromochloromethane	<10 µg/kg	TM116			<10			M
1,2-Dibromoethane	<10 µg/kg	TM116			<10			M
Chlorobenzene	<5 µg/kg	TM116			<5			M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116			<10			M
Ethylbenzene	<4 µg/kg	TM116	<80	<80	<4			M
p/m-Xylene	<10 µg/kg	TM116	<200	<200	<10			#
o-Xylene	<10 µg/kg	TM116	<200	<200	<10			M
Styrene	<10 µg/kg	TM116			<10			@ #
Bromoform	<10 µg/kg	TM116			<10			M
Isopropylbenzene	<5 µg/kg	TM116			<5			#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116			<10			#
1,2,3-Trichloropropane	<16 µg/kg	TM116			<16			M
Bromobenzene	<10 µg/kg	TM116			<10			M
Propylbenzene	<10 µg/kg	TM116			<10			M
2-Chlorotoluene	<9 µg/kg	TM116			<9			M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116			<8			M
4-Chlorotoluene	<10 µg/kg	TM116			<10			M
tert-Butylbenzene	<14 µg/kg	TM116			<14			#
1,2,4-Trimethylbenzene	<9 µg/kg	TM116			<9			#
sec-Butylbenzene	<10 µg/kg	TM116			<10			
4-Isopropyltoluene	<10 µg/kg	TM116			<10			
1,3-Dichlorobenzene	<8 µg/kg	TM116			<8			M
1,4-Dichlorobenzene	<5 µg/kg	TM116			<5			M
n-Butylbenzene	<11 µg/kg	TM116			<11			
1,2-Dichlorobenzene	<10 µg/kg	TM116			<10			M
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116			<14			M
Tert-amyl methyl ether	<10 µg/kg	TM116			<10			#
1,2,4-Trichlorobenzene	<20 µg/kg	TM116			<20			
Hexachlorobutadiene	<20 µg/kg	TM116			<20			
Naphthalene	<13 µg/kg	TM116			<13			M
1,2,3-Trichlorobenzene	<20 µg/kg	TM116			<20			#
1,3,5-Trichlorobenzene	<20 µg/kg	TM116			<20			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH06 F-VS9WTB-2D20 0.10 - 0.10 Soil/Solid (S) 01/09/2022 09:05 02/09/2022 220906-15 26830947 ES2	MS-BH06 F-0AAWTB-LR5V 0.50 - 0.50 Soil/Solid (S) 01/09/2022 09:17 02/09/2022 220906-15 26830955 ES5	MS-BH06 F-C1BWTB-B5C2 0.90 - 0.90 Soil/Solid (S) 01/09/2022 09:30 02/09/2022 220906-15 26830962 ES7				
# ISO17025 accredited. M mCERTS accredited. aq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)									Depth (m)
Component	LOD/Units	Method							
Sum of Detected Xylenes	<0.02 mg/kg	TM116					<0.02		
Sum of BTEX	<40 µg/kg	TM116	<800	<800	<40				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference	
Mass Sample taken (kg)	0.152
Mass of dry sample (kg)	0.090
Particle Size <4mm	>95%

Site Location	Keadby 3
Natural Moisture Content (%)	68.2
Dry Matter Content (%)	59.5

Case

SDG	220906-15
Lab Sample Number(s)	26830955
Sampled Date	01-Sep-2022
Customer Sample Ref.	MS-BH06 ES5
Depth (m)	0.50 - 0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Ammoniacal Nitrogen as N	0.023	<0.01	0.23	<0.1	-	-	-
Total Ammonium Low as NH4	0.296	<0.01	2.96	<0.1	-	-	-
Low Level Hexavalent Chromium	<0.003	<0.003	<0.03	<0.03	-	-	-
Chromium III (Low)	<0.003	<0.003	<0.03	<0.03	-	-	-
Free Cyanide - Low Level	<0.0025	<0.0025	<0.025	<0.025	-	-	-
Total Cyanide - Low Level	<0.005	<0.005	<0.05	<0.05	-	-	-
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Arsenic	0.000545	<0.0005	0.00545	<0.005	-	-	-
Boron	0.0633	<0.01	0.633	<0.1	-	-	-
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	-	-	-
Calcium (Dis.Filt) mg/l	32.8	<0.2	328	<2	-	-	-
Chromium	<0.001	<0.001	<0.01	<0.01	-	-	-
Copper	0.00587	<0.0003	0.0587	<0.003	-	-	-
Hardness dissolved	90.8	<0.65	908	<6.5	-	-	-
Iron (Dis.Filt) mg/l	0.253	<0.019	2.53	<0.19	-	-	-
Lead	0.000619	<0.0002	0.00619	<0.002	-	-	-
Nickel	0.00262	<0.0004	0.0262	<0.004	-	-	-
Selenium	<0.001	<0.001	<0.01	<0.01	-	-	-
Zinc	0.00691	<0.001	0.0691	<0.01	-	-	-
Nitrate as NO3	4.52	<0.3	45.2	<3	-	-	-
Sulphate (soluble)	<2	<2	<20	<20	-	-	-
Nitrite as NO2	<0.05	<0.05	<0.5	<0.5	-	-	-
pH Value of Filtered Water	8.3	<0.001	83	<0.01	-	-	-
Total Organic Carbon	20.9	<3	209	<30	-	-	-

PAH Spec MS - Aqueous (W)

Acenaphthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Chrysene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Fluoranthene by GCMS	0.00000599	<0.000005	0.0000599	<0.00005	-	-	-
Fluorene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Naphthalene by GCMS	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Phenanthrene by GCMS	0.0000058	<0.000005	0.000058	<0.00005	-	-	-
Pyrene by GCMS	0.00000521	<0.000005	0.0000521	<0.00005	-	-	-

Leach Test Information

Date Prepared	13-Sep-2022
pH (pH Units)	8.41
Conductivity (µS/cm)	165.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.837



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.152	Natural Moisture Content (%)	68.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	59.5
Particle Size <4mm	>95%		

Case	
SDG	220906-15
Lab Sample Number(s)	26830955
Sampled Date	01-Sep-2022
Customer Sample Ref.	MS-BH06 ES5
Depth (m)	0.50 - 0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
PAH Spec MS - Aqueous (W)							
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.00082	<0.00082	-	-	-

Leach Test Information

Date Prepared	13-Sep-2022
pH (pH Units)	8.41
Conductivity (µS/cm)	165.00
Temperature (°C)	17.20
Volume Leachant (Litres)	0.837



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Notification of NDPs (No determination possible)

Date Received : 06/09/2022 06:22:10

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
26830955	MS-BH06	0.50 - 0.50	Ammonium Low	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Low Level Hexavalent Chromium (w)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Chromium III	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Low Level Cyanide (W)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Mercury Dissolved	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Dissolved Metals by ICP-MS	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Anions by Kone (w)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Nitrite by Kone (w)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	PAH Spec MS - Aqueous (W)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	pH Value of Filtered Water	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	Total Organic and Inorganic Carbon	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	CEN Readings	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	CEN 2:1 Leachate (1 Stage)	Sample moisture too high
26830955	MS-BH06	0.50 - 0.50	CEN Readings	Sample moisture too high



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SDG: 220906-15
Client Ref.: F212561

Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



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Report Number: 661970
Location: Keadby 3

Superseded Report: 661534

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	26830947	26830955	26830962
	MS-BH06	MS-BH06	MS-BH06
AGS Ref.	ES2	ES5	ES7
Depth	0.10 - 0.10	0.50 - 0.50	0.90 - 0.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Low		16-Sep-2022	
Ammonium Soil by Titration	12-Sep-2022	12-Sep-2022	12-Sep-2022
Anions by Kone (soil)	12-Sep-2022	12-Sep-2022	12-Sep-2022
Anions by Kone (w)		16-Sep-2022	
CEN 10:1 Leachate (1 Stage)		13-Sep-2022	
CEN 2:1 Leachate (1 Stage)		08-Sep-2022	
CEN Readings		16-Sep-2022	
Chromium III	11-Sep-2022	16-Sep-2022	09-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022	12-Sep-2022	12-Sep-2022
Dissolved Metals by ICP-MS		20-Sep-2022	
Easily Liberated Sulphide	13-Sep-2022	13-Sep-2022	14-Sep-2022
Elemental Sulphur	15-Sep-2022	15-Sep-2022	15-Sep-2022
EPH	14-Sep-2022	14-Sep-2022	14-Sep-2022
EPH by GCxGC-FID	12-Sep-2022	12-Sep-2022	08-Sep-2022
EPH CWG GC (S)			09-Sep-2022
GRO by GC-FID (S)	14-Sep-2022	14-Sep-2022	14-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022	08-Sep-2022	08-Sep-2022
Low Level Cyanide (W)		21-Sep-2022	
Low Level Hexavalent Chromium (w)		16-Sep-2022	
Mercury Dissolved		16-Sep-2022	
Metals in solid samples by OES	12-Sep-2022	13-Sep-2022	09-Sep-2022
Moisture at 105C		08-Sep-2022	
Nitrite by Kone (w)		16-Sep-2022	
NO3, NO2 and TON by KONE (s)	12-Sep-2022	12-Sep-2022	12-Sep-2022
PAH by GCMS	08-Sep-2022	08-Sep-2022	08-Sep-2022
PAH Spec MS - Aqueous (W)		16-Sep-2022	
pH	09-Sep-2022	09-Sep-2022	09-Sep-2022
pH Value of Filtered Water		16-Sep-2022	
Phenols by HPLC (S)	15-Sep-2022	15-Sep-2022	15-Sep-2022
Sample description	07-Sep-2022	07-Sep-2022	06-Sep-2022
Semi Volatile Organic Compounds			09-Sep-2022
Total Organic and Inorganic Carbon		16-Sep-2022	
Total Organic Carbon	13-Sep-2022	14-Sep-2022	13-Sep-2022
Total Sulphate	12-Sep-2022	12-Sep-2022	12-Sep-2022
TPH CWG GC (S)			14-Sep-2022
VOC MS (S)	13-Sep-2022	13-Sep-2022	09-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220906-15
Client Ref: F212561

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Superseded Report: 661534

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220906-16
Your Reference:	F212561
Location:	Keadby 3
Report No:	661971
Order Number:	386/121917/CP

This report has been revised and directly supersedes 661649 in its entirety.

We received 3 samples on Friday September 02, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 21, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26830982	MS-BH21	ES1	0.10 - 0.10	31/08/2022
26830989	MS-BH21	ES4	0.50 - 0.50	31/08/2022
26830997	MS-BH21	ES7	0.80 - 0.80	31/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26830982	MS-BH21	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
		26830989	MS-BH21	ES4	0.50 - 0.50	250g Amber Jar (ALE210)	S
		26830997	MS-BH21	ES7	0.80 - 0.80	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
					250g Amber Jar (ALE260)	S	
					60g VOC (ALE215)	S	
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Low	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Anions by Kone (w)	All	NDPs: 0 Tests: 1					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1					
CEN Readings	All	NDPs: 0 Tests: 1					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26830997	MS-BH21	ES7	0.80 - 0.80	60g VOC (ALE215)	S
		26830989	MS-BH21	ES4	0.50 - 0.50	250g Amber Jar (ALE210)	S
		26830982	MS-BH21	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE215)	S
						250g Amber Jar (ALE210)	S
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2					
						X	
						X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1					
						X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1					
						X	
Mercury Dissolved	All	NDPs: 0 Tests: 1					
						X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 2					
						X	
						X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1					
						X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2					
						X	
						X	
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					
						X	
PAH by GCMS	All	NDPs: 0 Tests: 2					
						X	
						X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1					
						X	
pH	All	NDPs: 0 Tests: 2					
						X	
						X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 1					
						X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2					
						X	
						X	
Sample description	All	NDPs: 0 Tests: 3					
						X	
						X	
						X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1					
						X	



CERTIFICATE OF ANALYSIS

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SDG: 220906-16
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Location: Keadby 3

Superseded Report: 661649

Results Legend								
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		26830982	26830989	26830997			
	Customer Sample Reference		MS-BH21	MS-BH21	MS-BH21			
	AGS Reference		ES1	ES4	ES7			
	Depth (m)		0.10 - 0.10	0.50 - 0.50	0.80 - 0.80			
	Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)
	Sample Type		S	S	S	S	S	S
	Total Organic Carbon	All	NDPs: 0 Tests: 2	X			X	
Total Sulphate	All	NDPs: 0 Tests: 2	X			X		
VOC MS (S)	All	NDPs: 0 Tests: 2		X			X	



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26830982	MS-BH21	0.10 - 0.10	Light Brown	Sandy Clay Loam	Vegetation	None
26830989	MS-BH21	0.50 - 0.50	Dark Brown	Silty Clay Loam	Stones	Vegetation
26830997	MS-BH21	0.80 - 0.80	Light Brown	Sandy Clay	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Results Legend		Customer Sample Ref.	MS-BH21	MS-BH21	MS-BH21		
#	ISO17025 accredited.		F-X9XUTB-B645	F-QBXUTB-46V6	F-RCXUTB-G06M		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.80 - 0.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	31/08/2022	31/08/2022	31/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:55	16:20	16:10		
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-16	220906-16	220906-16		
(F)	Trigger breach confirmed	SDG Ref	26830982	26830989	26830997		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	11	26	16		
2,4,5-T*	<0.01 mg/kg	SUB		<0.01			
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB		<0.01			
2,4-D*	<0.01 mg/kg	SUB		<0.01			
2,4-DB*	<0.01 mg/kg	SUB		<0.01			
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB		<0.01			
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB		<0.01			
Acifluorfen*	<0.01 mg/kg	SUB		<0.01			
Bentazone*	<0.01 mg/kg	SUB		<0.01			
Bromoxynil*	<0.01 mg/kg	SUB		<0.01			
Dicamba*	<0.01 mg/kg	SUB		<0.01			
Diclofop*	<0.01 mg/kg	SUB		<0.01			
Dinoseb*	<0.01 mg/kg	SUB		<0.01			
DNOC*	<0.01 mg/kg	SUB		<0.01			
Fluroxypyr*	<0.01 mg/kg	SUB		<0.01			
loxylnil*	<0.01 mg/kg	SUB		<0.01			
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB		<0.01			
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB		<0.01			
Mecoprop (MCP)*	<0.01 mg/kg	SUB		<0.01			
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB		<0.01			
Triclopyr*	<0.01 mg/kg	SUB		<0.01			
Triclosan*	<0.01 mg/kg	SUB		<0.01			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15		<15		
			M		M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12		<12		
			M		M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		
			M		@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		
			M		@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015		
			M		@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035		
			M		@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	4.33		2.14		
			#		#		
pH	1 pH Units	TM133	8.24		8.38		
			M		M		
Sulphur, Elemental	<10 mg/kg	TM136	<10		<10		
			M		M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6		
			M		M		
Cyanide, Total	<1 mg/kg	TM153	<1		<1		
			M		@ M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Table with 7 columns: Component, LOD/Units, Method, MS-BH21 F-X9XUTB-B645, MS-BH21 F-QBXUTB-46V6, MS-BH21 F-RCXUTB-G06M, and 3 empty columns. Rows include various chemical components like Cyanide, Sulphide, Chromium, Arsenic, Boron, Cadmium, etc.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
 Client Ref.: F212561

Report Number: 661971
 Location: Keadby 3

Superseded Report: 661649

GRO by GC-FID (S)

Component	LOD/Units	Method	MS-BH21 F-X9XUTB-B645 0.10 - 0.10 Soil/Solid (S)	MS-BH21 F-RCXUTB-G06M 0.80 - 0.80 Soil/Solid (S)		
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	<20		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.					
# ISO17025 accredited.	M mCERTS accredited.	aq Aqueous / settled sample.	dis.filt Dissolved / filtered sample.	tot.unfilt Total / unfiltered sample.	* Subcontracted - refer to subcontractor report for accreditation status.	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	(F) Trigger breach confirmed
1-4*\$@ Sample deviation (see appendix)							
Component	LOD/Units	Method	MS-BH21				
Dichlorvos	<50 µg/kg	TM073	F-QBXUTB-46V6 0.50 - 0.50 Soil/Solid (S) 31/08/2022 16:20 02/09/2022 220906-16 26830989 ES4				
Mevinphos	<50 µg/kg	TM073					
Phorate	<50 µg/kg	TM073					
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073					
Diazinon	<50 µg/kg	TM073					
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073					
Disulfoton	<50 µg/kg	TM073					
Heptachlor	<50 µg/kg	TM073					
Aldrin	<50 µg/kg	TM073					
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073					
Methyl parathion	<50 µg/kg	TM073					
Malathion	<50 µg/kg	TM073					
Fenitrothion	<50 µg/kg	TM073					
Heptachlor epoxide	<50 µg/kg	TM073					
Parathion	<50 µg/kg	TM073					
Endosulphan I	<50 µg/kg	TM073					
p,p-DDE	<50 µg/kg	TM073					
Dieldrin	<50 µg/kg	TM073					
Endrin	<50 µg/kg	TM073					
p,p-TDE (DDD)	<50 µg/kg	TM073					
Ethion	<50 µg/kg	TM073					
Endosulphan II	<50 µg/kg	TM073					
p,p-DDT	<50 µg/kg	TM073		<150			
p,p-Methoxychlor	<50 µg/kg	TM073		<50			
Endosulphan sulphate	<50 µg/kg	TM073		<50			
Azinphos-methyl	<50 µg/kg	TM073		<50			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH21	MS-BH21			
#	ISO17025 accredited.		F-X9XUTB-B645	F-RCXUTB-G06M			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	31/08/2022	31/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:55	16:10			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-16	220906-16			
(F)	Trigger breach confirmed	SDG Ref	26830982	26830997			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	92.2	88.8			
Acenaphthene-d10 % recovery**	%	TM218	95.2	93			
Phenanthrene-d10 % recovery**	%	TM218	102	95.4			
Chrysene-d12 % recovery**	%	TM218	97.8	74.7			
Perylene-d12 % recovery**	%	TM218	95.4	71.1			
Naphthalene	<9 µg/kg	TM218	23.6	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	18.2	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	164	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	23.5	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	422	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	370	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	181	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	170	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	250	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	85.8	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	162	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	120	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	117	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	2110	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	MS-BH21ES1
Depth (m)	0.10 - 0.10
Sample Type	SOLID
Date Sampled	31/08/2022 00:00:00
Date Received	02/09/2022 05:00:00
SDG	220906-16
Original Sample	26830982
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.204	Natural Moisture Content (%)	16.7
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	85.7
Particle Size <4mm	>95%		

Case	
SDG	220906-16
Lab Sample Number(s)	26830997
Sampled Date	31-Aug-2022
Customer Sample Ref.	MS-BH21 ES7
Depth (m)	0.80 - 0.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	0.059	<0.05	0.118	<0.1
pH Value of Filtered Water	8.2	<0.001	-	-
Sulphate (soluble)	<2	<2	<4	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	0.0000116	<0.00001	0.0000232	<0.00002
Total Organic Carbon	16.7	<6	33.4	<12
Ammoniacal Nitrogen as N	0.024	<0.01	0.048	<0.02
Arsenic	<0.0005	<0.0005	<0.001	<0.001
Nitrate as NO3	2.19	<0.3	4.38	<0.6
Total Ammonium Low as NH4	0.309	<0.01	0.618	<0.02
Boron	0.0515	<0.01	0.103	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	<0.001	<0.001	<0.002	<0.002
Copper	0.00278	<0.0003	0.00556	<0.0006
Lead	0.000337	<0.0002	0.000674	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.00134	<0.001	0.00268	<0.002
Calcium (Dis.Filt) mg/l	35.8	<0.2	71.6	<0.4
Iron (Dis.Filt) mg/l	0.866	<0.019	1.73	<0.038
Hardness dissolved	96.3	<0.65	193	<1.3

PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	0.0000102	<0.000005	0.0000204	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	0.00000914	<0.000005	0.0000183	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.16
Conductivity (µS/cm)	162.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.321
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

21/09/2022 15:12:48

15:12:25 21/09/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.204	Natural Moisture Content (%)	16.7
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	85.7
Particle Size <4mm	>95%		

Case	
SDG	220906-16
Lab Sample Number(s)	26830997
Sampled Date	31-Aug-2022
Customer Sample Ref.	MS-BH21 ES7
Depth (m)	0.80 - 0.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.16
Conductivity (µS/cm)	162.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.321
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

21/09/2022 15:12:48

15:12:25 21/09/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-16
Client Ref.: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Test Completion Dates

Lab Sample No(s)	26830982	26830989	26830997
Customer Sample Ref.	MS-BH21	MS-BH21	MS-BH21
AGS Ref.	ES1	ES4	ES7
Depth	0.10 - 0.10	0.50 - 0.50	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*		20-Sep-2022	
Ammonium Low			14-Sep-2022
Ammonium Soil by Titration	08-Sep-2022		12-Sep-2022
Anions by Kone (soil)	12-Sep-2022		12-Sep-2022
Anions by Kone (w)			09-Sep-2022
Asbestos ID in Solid Samples	14-Sep-2022		
CEN 2:1 Leachate (1 Stage)			14-Sep-2022
CEN Readings			12-Sep-2022
Chromium III	11-Sep-2022		14-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022		15-Sep-2022
Dissolved Metals by ICP-MS			15-Sep-2022
Easily Liberated Sulphide	13-Sep-2022		13-Sep-2022
Elemental Sulphur	15-Sep-2022		15-Sep-2022
EPH	14-Sep-2022		14-Sep-2022
EPH by GCxGC-FID	08-Sep-2022		08-Sep-2022
GRO by GC-FID (S)	14-Sep-2022		14-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022		08-Sep-2022
Low Level Cyanide (W)			21-Sep-2022
Low Level Hexavalent Chromium (w)			10-Sep-2022
Mercury Dissolved			13-Sep-2022
Metals in solid samples by OES	12-Sep-2022		12-Sep-2022
Moisture at 105C			07-Sep-2022
Nitrite by Kone (w)			08-Sep-2022
NO3, NO2 and TON by KONE (s)	12-Sep-2022		12-Sep-2022
OC OP Pesticides and Triazine Herb		09-Sep-2022	
PAH by GCMS	08-Sep-2022		08-Sep-2022
PAH Spec MS - Aqueous (W)			13-Sep-2022
pH	08-Sep-2022		09-Sep-2022
pH Value of Filtered Water			12-Sep-2022
Phenols by HPLC (S)	14-Sep-2022		15-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022	06-Sep-2022
Total Organic and Inorganic Carbon			09-Sep-2022
Total Organic Carbon	13-Sep-2022		14-Sep-2022
Total Sulphate	12-Sep-2022		12-Sep-2022
VOC MS (S)	13-Sep-2022		13-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2289818	Issue Date	: 20-Sep-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220906-16	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 09-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 09-Sep-2022 - 20-Sep-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný

Position

[REDACTED] Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26834745		----		----	
				Laboratory sample ID		MS-BH21		----		----	
				Client sampling date / time		PR2289818001		----		----	
						06-Sep-2022 12:42		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	72.0	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxylinil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

SDG: 220906-16
Client Ref: F212561

Report Number: 661971
Location: Keadby 3

Superseded Report: 661649

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 15 September 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220906-17
Your Reference: F212561
Location: Keadby 3
Report No: 661378
Order Number: 386/121917/CP

This report has been revised and directly supersedes 661208 in its entirety.

We received 4 samples on Friday September 02, 2022 and 3 of these samples were scheduled for analysis which was completed on Thursday September 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

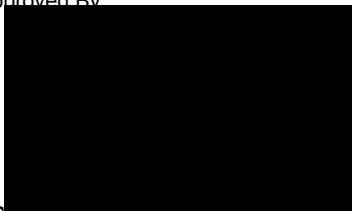
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



So
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831043	MS-BH02	ES2	0.10 - 0.10	30/08/2022
26831050	MS-BH02	ES4	0.45 - 0.45	30/08/2022
26831057	MS-BH02	ES9	0.85 - 0.85	30/08/2022
26831035	MS-BH02	ES10	1.20 - 1.20	30/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831043	MS-BH02	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	S
		26831057	MS-BH02	ES9	0.85 - 0.85	1kg TUB with Handle (ALE260)	S
		26831035	MS-BH02	ES10	1.20 - 1.20	250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 1 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 1 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					250g Amber Jar (ALE210)	60g VOC (ALE215)	60g VOC (ALE215)	
	26831043	MS-BH02	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	
	26831057	MS-BH02	ES9	0.85 - 0.85	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	S	
	26831035	MS-BH02	ES10	1.20 - 1.20	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	
pH	All	NDPs: 0 Tests: 3						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3						
Sample description	All	NDPs: 0 Tests: 3						
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1						
Total Organic Carbon	All	NDPs: 0 Tests: 3						
Total Sulphate	All	NDPs: 0 Tests: 3						
TPH CWG GC (S)	All	NDPs: 0 Tests: 1						
VOC MS (S)	All	NDPs: 0 Tests: 3						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831035	MS-BH02	1.20 - 1.20	Dark Brown	Sandy Silt Loam	Vegetation	None
26831043	MS-BH02	0.10 - 0.10	Light Brown	Clay Loam	Stones	Vegetation
26831057	MS-BH02	0.85 - 0.85	Dark Brown	Sandy Silt Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Results Legend		Customer Sample Ref.	MS-BH02	MS-BH02	MS-BH02		
#	ISO17025 accredited.		F-GN2TTB-BZBB	F-PD1TTB-VA7I	F-O52TTB-PWFY		
M	mCERTS accredited.		0.10 - 0.10	0.85 - 0.85	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.fltr	Dissolved / filtered sample.	Sample Type	30/08/2022	30/08/2022	30/08/2022		
tot.unfltr	Total / unfiltered sample.	Date Sampled	14:40	15:30	15:40		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-17	220906-17	220906-17		
	(F) Trigger breach confirmed	SDG Ref	26831043	26831057	26831035		
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES9	ES10		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	52	33		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M	<0.015 @ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M	<0.035 @ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	4.17 #	59.5 #	12.9 #		
pH	1 pH Units	TM133	8.17 M	7.63 M	6.94 M		
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 M	<1 M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	18.8	12.5			
Arsenic	<0.6 mg/kg	TM181	16.8 M	13 M	1.29 M		
Boron	<0.7 mg/kg	TM181	16.4 #	17.9 #	1.62 #		
Cadmium	<0.02 mg/kg	TM181	0.272 M	0.181 M	0.0387 M		
Chromium	<0.9 mg/kg	TM181	18.8 M	12.5 M	3.02 M		
Copper	<1.4 mg/kg	TM181	19.4 M	14.7 M	3.97 M		
Iron	<1000 mg/kg	TM181	31100 #	30200 #	2120 #		
Lead	<0.7 mg/kg	TM181	82.2 M	54.2 M	5.14 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	29.4 M	23.5 M	2.42 M		
Selenium	<1 mg/kg	TM181	1.01 #	1.17 #	<1 #		
Zinc	<1.9 mg/kg	TM181	113 M	75.4 M	4.19 M		
Sulphate, Total	<48 mg/kg	TM221	422 M	1140 M	213 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0141	0.0378	0.00711		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	3.38	0.49	<0.1		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.017 M	0.0957 M	0.0434 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	6.35	33.9	10.3		
EPH (C5-C40)	<35 mg/kg	TM415	<35	630	266		
EPH Surrogate % recovery**	%	TM415	103	100	97.8		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH02	MS-BH02	MS-BH02			
#	ISO17025 accredited.		F-GN2TTB-BZBB	F-PD1TTB-VA7I	F-O52TTB-PWFY			
M	mCERTS accredited.		0.10 - 0.10	0.85 - 0.85	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	30/08/2022	30/08/2022	30/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:40	15:30	15:40			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/09/2022	02/09/2022	02/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-17	220906-17	220906-17			
	(F) Trigger breach confirmed	SDG Ref	26831043	26831057	26831035			
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES9	ES10			
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	92.3	81.8	83.4			
Acenaphthene-d10 % recovery**	%	TM218	92.7	85.6	86.1			
Phenanthrene-d10 % recovery**	%	TM218	92.6	85.1	85.5			
Chrysene-d12 % recovery**	%	TM218	77.9	75.5	78.4			
Perylene-d12 % recovery**	%	TM218	78	71.7	71.6			
Naphthalene	<9 µg/kg	TM218	19.7	<9	<9			
			M	M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12			
			M	M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8			
			M	M	M			
Fluorene	<10 µg/kg	TM218	<10	<10	<10			
			M	M	M			
Phenanthrene	<15 µg/kg	TM218	85.7	<15	<15			
			M	M	M			
Anthracene	<16 µg/kg	TM218	<16	<16	<16			
			M	M	M			
Fluoranthene	<17 µg/kg	TM218	120	<17	<17			
			M	M	M			
Pyrene	<15 µg/kg	TM218	99.1	<15	<15			
			M	M	M			
Benz(a)anthracene	<14 µg/kg	TM218	43.4	<14	<14			
			M	M	M			
Chrysene	<10 µg/kg	TM218	52.9	<10	<10			
			M	M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	78.4	<15	<15			
			M	M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	22.6	<14	<14			
			M	M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	38	<15	<15			
			M	M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	31.6	<18	<18			
			M	M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23			
			M	M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	34	<24	<24			
			M	M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	626	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH02 F-GN2TTB-BZBB 0.10 - 0.10 Soil/Solid (S) 30/08/2022 14:40 02/09/2022 220906-17 26831043 ES2			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4* Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH02 F-GN2TTB-BZBB 0.10 - 0.10 Soil/Solid (S) 30/08/2022 14:40 02/09/2022 220906-17 26831043 ES2				
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

TPH CWG (S)

Results Legend		Customer Sample Ref.	MS-BH02				
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-GN2TTB-BZBB				
M mCERTS accredited.			0.10 - 0.10				
AQ Aqueous / settled sample.			Soil/Solid (S)				
Diss.filt Dissolved / filtered sample.			30/08/2022				
tot.unfilt Total / unfiltered sample.			14:40				
* Subcontracted - refer to subcontractor report for accreditation status.			02/09/2022				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			220906-17				
(F) Trigger breach confirmed			26831043				
1-4* @ Sample deviation (see appendix)			ES2				
Component	LOD/Units		Method				
GRO Surrogate % recovery**	%	TM089	82.9				
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	6210	#			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	7050				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	12400				
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	3230	#			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	5400				
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	12400				
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50				
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH02 F-GN2TTB-BZBB 0.10 - 0.10 Soil/Solid (S) 30/08/2022 14:40 02/09/2022 220906-17 26831043 ES2	MS-BH02 F-PD1TTB-VA7I 0.85 - 0.85 Soil/Solid (S) 30/08/2022 15:30 02/09/2022 220906-17 26831057 ES9	MS-BH02 F-O52TTB-PWFY 1.20 - 1.20 Soil/Solid (S) 30/08/2022 15:40 02/09/2022 220906-17 26831035 ES10		
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	113	110	118		
Toluene-d8**	%	TM116	97	93.6	89.6		
4-Bromofluorobenzene**	%	TM116	93.8	83.6	78.9		
Dichlorodifluoromethane	<6 µg/kg	TM116	<120 #				
Chloromethane	<7 µg/kg	TM116	<140 #				
Vinyl Chloride	<6 µg/kg	TM116	<120 @ M				
Bromomethane	<10 µg/kg	TM116	<200 M				
Chloroethane	<10 µg/kg	TM116	<200 M				
Trichlorofluoromethane	<6 µg/kg	TM116	<120 M				
1,1-Dichloroethene	<10 µg/kg	TM116	<200 #				
Carbon Disulphide	<7 µg/kg	TM116	<140 M				
Dichloromethane	<10 µg/kg	TM116	<260 #				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M	<200 M	<200 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<200 M				
1,1-Dichloroethane	<8 µg/kg	TM116	<160 M				
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<120 M				
2,2-Dichloropropane	<10 µg/kg	TM116	<200				
Bromochloromethane	<10 µg/kg	TM116	<200 M				
Chloroform	<8 µg/kg	TM116	<160 M				
1,1,1-Trichloroethane	<7 µg/kg	TM116	<140 M				
1,1-Dichloropropene	<10 µg/kg	TM116	<200 M				
Carbontetrachloride	<10 µg/kg	TM116	<200 M				
1,2-Dichloroethane	<5 µg/kg	TM116	<100 M				
Benzene	<9 µg/kg	TM116	<180 M	<180 M	<180 M		
Trichloroethene	<9 µg/kg	TM116	<180 #				
1,2-Dichloropropane	<10 µg/kg	TM116	<200 M				
Dibromomethane	<9 µg/kg	TM116	<180 M				
Bromodichloromethane	<7 µg/kg	TM116	<140 M				
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<200 M				
Toluene	<7 µg/kg	TM116	<140 M	<140 M	<140 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<200				
1,1,2-Trichloroethane	<10 µg/kg	TM116	<200 M				
1,3-Dichloropropane	<7 µg/kg	TM116	<140 M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH02 F-GN2TTB-BZBB 0.10 - 0.10 Soil/Solid (S) 30/08/2022 14:40 02/09/2022 220906-17 26831043 ES2	MS-BH02 F-PD1TTB-VA7I 0.85 - 0.85 Soil/Solid (S) 30/08/2022 15:30 02/09/2022 220906-17 26831057 ES9	MS-BH02 F-O52TTB-PWFY 1.20 - 1.20 Soil/Solid (S) 30/08/2022 15:40 02/09/2022 220906-17 26831035 ES10		
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116	<100 M				
Dibromochloromethane	<10 µg/kg	TM116	<200 M				
1,2-Dibromoethane	<10 µg/kg	TM116	<200 M				
Chlorobenzene	<5 µg/kg	TM116	<100 M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<200 M				
Ethylbenzene	<4 µg/kg	TM116	<80 M	<80 M	<80 M		
p/m-Xylene	<10 µg/kg	TM116	<200 #	<200 #	<200 #		
o-Xylene	<10 µg/kg	TM116	<200 M	<200 M	<200 M		
Styrene	<10 µg/kg	TM116	<200 @ #				
Bromofom	<10 µg/kg	TM116	<200 M				
Isopropylbenzene	<5 µg/kg	TM116	<100 #				
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<200 #				
1,2,3-Trichloropropane	<16 µg/kg	TM116	<320 M				
Bromobenzene	<10 µg/kg	TM116	<200 M				
Propylbenzene	<10 µg/kg	TM116	<200 M				
2-Chlorotoluene	<9 µg/kg	TM116	<180 M				
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<160 M				
4-Chlorotoluene	<10 µg/kg	TM116	<200 M				
tert-Butylbenzene	<14 µg/kg	TM116	<280 #				
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<180 #				
sec-Butylbenzene	<10 µg/kg	TM116	<200				
4-Isopropyltoluene	<10 µg/kg	TM116	<200				
1,3-Dichlorobenzene	<8 µg/kg	TM116	<160 M				
1,4-Dichlorobenzene	<5 µg/kg	TM116	<100 M				
n-Butylbenzene	<11 µg/kg	TM116	<220				
1,2-Dichlorobenzene	<10 µg/kg	TM116	<200 M				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<280 M				
Tert-amyl methyl ether	<10 µg/kg	TM116	<200 #				
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<400				
Hexachlorobutadiene	<20 µg/kg	TM116	<400				
Naphthalene	<13 µg/kg	TM116	<260 M				
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<400 #				
1,3,5-Trichlorobenzene	<20 µg/kg	TM116	<400				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH02ES9 0.85 - 0.85 SOLID 30/08/2022 00:00:00 02/09/2022 05:00:00 220906-17 26831057 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH02ES10 1.20 - 1.20 SOLID 30/08/2022 00:00:00 02/09/2022 05:00:00 220906-17 26831035 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Notification of NDPs (No determination possible)

Date Received : 06/09/2022 06:34:10

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
26831035	MS-BH02 ES10	1.20 - 1.20	Hexavalent Chromium (s)	Sample too coloured
26831035	MS-BH02 ES10	1.20 - 1.20	Chromium III	Sample too coloured



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-17
Client Ref.: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Test Completion Dates

Lab Sample No(s)	26831035	26831043	26831057
Customer Sample Ref.	MS-BH02	MS-BH02	MS-BH02
AGS Ref.	ES10	ES2	ES9
Depth	1.20 - 1.20	0.10 - 0.10	0.85 - 0.85
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	12-Sep-2022	08-Sep-2022	15-Sep-2022
Anions by Kone (soil)	12-Sep-2022	12-Sep-2022	13-Sep-2022
Asbestos ID in Solid Samples	14-Sep-2022		14-Sep-2022
Chromium III		11-Sep-2022	12-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022	15-Sep-2022	12-Sep-2022
Easily Liberated Sulphide	13-Sep-2022	13-Sep-2022	13-Sep-2022
Elemental Sulphur	15-Sep-2022	15-Sep-2022	15-Sep-2022
EPH	13-Sep-2022	12-Sep-2022	13-Sep-2022
EPH by GCxGC-FID	08-Sep-2022	08-Sep-2022	09-Sep-2022
EPH CWG GC (S)		08-Sep-2022	
GRO by GC-FID (S)	13-Sep-2022	12-Sep-2022	13-Sep-2022
Hexavalent Chromium (s)		08-Sep-2022	08-Sep-2022
Metals in solid samples by OES	12-Sep-2022	12-Sep-2022	13-Sep-2022
NO3, NO2 and TON by KONE (s)	12-Sep-2022	12-Sep-2022	13-Sep-2022
PAH by GCMS	08-Sep-2022	08-Sep-2022	15-Sep-2022
pH	14-Sep-2022	09-Sep-2022	14-Sep-2022
Phenols by HPLC (S)	15-Sep-2022	14-Sep-2022	15-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022	06-Sep-2022
Semi Volatile Organic Compounds		09-Sep-2022	
Total Organic Carbon	13-Sep-2022	13-Sep-2022	15-Sep-2022
Total Sulphate	12-Sep-2022	12-Sep-2022	12-Sep-2022
TPH CWG GC (S)		12-Sep-2022	
VOC MS (S)	13-Sep-2022	13-Sep-2022	13-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220906-17
Client Ref: F212561

Report Number: 661378
Location: Keadby 3

Superseded Report: 661208

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220906-18
Your Reference:	F212561
Location:	Keadby 3
Report No:	661972
Order Number:	386/121917/CP

This report has been revised and directly supersedes 661209 in its entirety.

We received 7 samples on Tuesday August 30, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 21, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

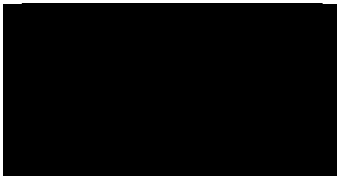
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831190	MS-BH14	ES3	0.15 - 0.15	23/08/2022
26831197	MS-BH14	ES6	0.45 - 0.45	23/08/2022
26831204	MS-BH14	ES9	0.80 - 0.80	23/08/2022
26831162	MS-BH14	ES12	1.20 - 1.20	23/08/2022
26831169	MS-BH14	ES16	1.80 - 1.80	23/08/2022
26831176	MS-BH14	ES19	2.80 - 2.80	23/08/2022
26831183	MS-BH14	ES22	3.80 - 3.80	23/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831197	MS-BH14	ES6	0.45 - 0.45	60g VOC (ALE215) 1kg TUB with Handle (ALE260)	S
		26831204	MS-BH14	ES9	0.80 - 0.80	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S
		26831162	MS-BH14	ES12	1.20 - 1.20	60g VOC (ALE215) 250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Ammonium Low	All	NDPs: 0 Tests: 2					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Anions by Kone (w)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3					
CEN Readings	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831197	MS-BH14	ES6	0.45 - 0.45	1kg TUB with Handle (ALE260)	S
		26831204	MS-BH14	ES9	0.80 - 0.80	250g Amber Jar (ALE210)	S
		26831162	MS-BH14	ES12	1.20 - 1.20	1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE215)	S
						60g VOC (ALE215)	S
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2					
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2					
Mercury Dissolved	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2					
pH	All	NDPs: 0 Tests: 3					
pH Value of Filtered Water	All	NDPs: 0 Tests: 2					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3					
Sample description	All	NDPs: 0 Tests: 3					
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1					
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	26831197	MS-BH14	ES6	0.45 - 0.45				S
	26831204	MS-BH14	ES9	0.80 - 0.80				S
	26831162	MS-BH14	ES12	1.20 - 1.20				S
								S
								S
								S
								S
								S
Total Organic Carbon	All	NDPs: 0 Tests: 3						
					X		X	
								X
Total Sulphate	All	NDPs: 0 Tests: 3						
					X		X	
								X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1					X	
VOC MS (S)	All	NDPs: 0 Tests: 3						
					X		X	
								X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831162	MS-BH14	1.20 - 1.20	Light Brown	Sand	Stones	Vegetation
26831197	MS-BH14	0.45 - 0.45	Dark Brown	Sandy Clay Loam	Vegetation	None
26831204	MS-BH14	0.80 - 0.80	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Results Legend		Customer Sample Ref.	MS-BH14	MS-BH14	MS-BH14		
#	ISO17025 accredited.		F-04LHTB-MJ2Q	F-0PMHTB-D37E	F-FAJHTB-KVOS		
M	mCERTS accredited.		0.45 - 0.45	0.80 - 0.80	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	23/08/2022	23/08/2022	23/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:55	12:29	11:25		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022	30/08/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-18	220906-18	220906-18		
	(F) Trigger breach confirmed	SDG Ref	26831197	26831204	26831162		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES9	ES12		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	16	25	15		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M	<0.015 @ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M	<0.035 @ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	2.41 #	6 #	0.386 #		
pH	1 pH Units	TM133	8.26 M	8.05 M	8.4 M		
Sulphur, Elemental	<10 mg/kg	TM136	10.7 M	<10 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M		
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M		
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	17	3.9	4.18		
Arsenic	<0.6 mg/kg	TM181	14.1 M	2.09 M	1.28 M		
Boron	<0.7 mg/kg	TM181	14.5 #	3.3 #	0.734 #		
Cadmium	<0.02 mg/kg	TM181	0.171 M	0.0555 M	0.049 M		
Chromium	<0.9 mg/kg	TM181	17 M	3.9 M	4.18 M		
Copper	<1.4 mg/kg	TM181	15.8 M	19.8 M	2.52 M		
Iron	<1000 mg/kg	TM181	30700 #	4110 #	3150 #		
Lead	<0.7 mg/kg	TM181	65.7 M	7.26 M	4.6 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	26.3 M	3.55 M	6.36 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #		
Zinc	<1.9 mg/kg	TM181	94.1 M	8.2 M	13 M		
Sulphate, Total	<48 mg/kg	TM221	360 M	336 M	70.5 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.012	0.0112	0.00235		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.42	0.45	<0.1		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.075 M	0.0802 M	0.0422 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	5.65	10.2	4.14		
EPH (C5-C40)	<35 mg/kg	TM415	<35	202	<35		
EPH Surrogate % recovery**	%	TM415	94.8	97.4	101		



CERTIFICATE OF ANALYSIS

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Results Legend			Customer Sample Ref.					
# ISO17025 accredited.		MS-BH14	MS-BH14	MS-BH14				
M mCERTS accredited.		F-04LHTB-MJ2Q	F-0PMHTB-D37E	F-FAJHTB-KVOS				
sq Aqueous / settled sample.		0.45 - 0.45	0.80 - 0.80	1.20 - 1.20				
diss.filt Dissolved / filtered sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)				
tot.unfilt Total / unfiltered sample.		23/08/2022	23/08/2022	23/08/2022				
* Subcontracted - refer to subcontractor report for accreditation status.		11:55	12:29	11:25				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		30/08/2022	30/08/2022	30/08/2022				
(F) Trigger breach confirmed		220906-18	220906-18	220906-18				
1-4* Sample deviation (see appendix)		26831197	26831204	26831162				
		SDG Ref	ES6	ES9	ES12			
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	202	<35			
			@ M	@ M	@ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.		MS-BH14	MS-BH14			
#	ISO17025 accredited.			F-04LHTB-MJ2Q	F-FAJHTB-KVOS			
M	mCERTS accredited.	Depth (m)	0.45 - 0.45	1.20 - 1.20				
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Date Sampled	23/08/2022	23/08/2022				
tot.unfilt	Total / unfiltered sample.	Sample Time	11:55	11:25				
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Received	30/08/2022	30/08/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	220906-18	220906-18				
(F)	Trigger breach confirmed	Lab Sample No.(s)	26831197	26831162				
1-4*\$@	Sample deviation (see appendix)	AGS Reference	ES6	ES12				
Component	LOD/Units	Method						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20 @	<20 @				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH14	MS-BH14	MS-BH14		
#	ISO17025 accredited.		F-04LHTB-MJ2Q	F-0PMHTB-D37E	F-FAJHTB-KVOS		
M	mCERTS accredited.		0.45 - 0.45	0.80 - 0.80	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	23/08/2022	23/08/2022	23/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:55	12:29	11:25		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022	30/08/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-18	220906-18	220906-18		
(F)	Trigger breach confirmed	SDG Ref	26831197	26831204	26831162		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES9	ES12		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	94.4	83.6	92.2		
Acenaphthene-d10 % recovery**	%	TM218	94.9	86.4	93.2		
Phenanthrene-d10 % recovery**	%	TM218	94.1	85.6	93.7		
Chrysene-d12 % recovery**	%	TM218	75.3	79.7	84		
Perylene-d12 % recovery**	%	TM218	74.2	73.9	85.9		
Naphthalene	<9 µg/kg	TM218	14.1	<9	<9		
			@ M	@ M	@ M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			@ M	@ M	@ M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			@ M	@ M	@ M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			@ M	@ M	@ M		
Phenanthrene	<15 µg/kg	TM218	45.1	<15	<15		
			@ M	@ M	@ M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			@ M	@ M	@ M		
Fluoranthene	<17 µg/kg	TM218	22.3	<17	<17		
			@ M	@ M	@ M		
Pyrene	<15 µg/kg	TM218	20.9	<15	<15		
			@ M	@ M	@ M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14		
			@ M	@ M	@ M		
Chrysene	<10 µg/kg	TM218	<10	<10	<10		
			@ M	@ M	@ M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	18.8	<15	<15		
			@ M	@ M	@ M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14		
			@ M	@ M	@ M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15		
			@ M	@ M	@ M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18		
			@ M	@ M	@ M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			@ M	@ M	@ M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24		
			@ M	@ M	@ M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	121	<118	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH14 F-0PMHTB-D37E 0.80 - 0.80 Soil/Solid (S) 23/08/2022 12:29 30/08/2022 220906-18 26831204 ES9			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4*\$@ Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18

Report Number: 661972

Superseded Report: 661209

Client Ref.: F212561

Location: Keadby 3

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH14 F-OPMTB-D37E 0.80 - 0.80 Soil/Solid (S) 23/08/2022 12:29 30/08/2022 220906-18 26831204 ES9				
Component	LOD/Units	Method	AGS Reference				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

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SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH14							
M mCERTS accredited.		F-0PMHTB-D37E							
aq Aqueous / settled sample.		0.80 - 0.80							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		23/08/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		Date Sampled							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12:29							
(F) Trigger breach confirmed		Sample Time							
1-4* @ Sample deviation (see appendix)		Date Received							
		220906-18							
		SDG Ref							
		26831204							
		Lab Sample No.(s)							
		ES9							
		AGS Reference							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	73.1	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2560	@ #					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	20300	@ #					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	3740	@					
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	26600	@					
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	106000	@					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1360	@ #					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	15800	@ #					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	42000	@ #					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	20600	@					
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	2860	@					
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	79800	@					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	106000	@					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



CERTIFICATE OF ANALYSIS

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Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH14	MS-BH14	MS-BH14		
#	ISO17025 accredited.		F-04LHTB-MJ2Q	F-0PMHTB-D37E	F-FAJHTB-KVOS		
M	mCERTS accredited.	Depth (m)	0.45 - 0.45	0.80 - 0.80	1.20 - 1.20		
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Date Sampled	23/08/2022	23/08/2022	23/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:55	12:29	11:25		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022	30/08/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-18	220906-18	220906-18		
(F)	Trigger breach confirmed	SDG Ref	26831197	26831204	26831162		
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES9	ES12		
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	104 @	104 @	105 @		
Toluene-d8**	%	TM116	95.8 @	94.8 @	97.9 @		
4-Bromofluorobenzene**	%	TM116	90.4 @	86.9 @	94.6 @		
Dichlorodifluoromethane	<6 µg/kg	TM116		<120 @ #			
Chloromethane	<7 µg/kg	TM116		<140 @ #			
Vinyl Chloride	<6 µg/kg	TM116		<120 @ M			
Bromomethane	<10 µg/kg	TM116		<200 @ M			
Chloroethane	<10 µg/kg	TM116		<200 @ M			
Trichlorofluoromethane	<6 µg/kg	TM116		<120 @ M			
1,1-Dichloroethene	<10 µg/kg	TM116		<200 @ #			
Carbon Disulphide	<7 µg/kg	TM116		<140 @ M			
Dichloromethane	<10 µg/kg	TM116		<345 @ #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<200 @ M	<10 @ M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<200 @ M			
1,1-Dichloroethane	<8 µg/kg	TM116		<160 @ M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<120 @ M			
2,2-Dichloropropane	<10 µg/kg	TM116		<200 @			
Bromochloromethane	<10 µg/kg	TM116		<200 @ M			
Chloroform	<8 µg/kg	TM116		<160 @ M			
1,1,1-Trichloroethane	<7 µg/kg	TM116		<140 @ M			
1,1-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Carbontetrachloride	<10 µg/kg	TM116		<200 @ M			
1,2-Dichloroethane	<5 µg/kg	TM116		<100 @ M			
Benzene	<9 µg/kg	TM116	<180 @ M	<180 @ M	<9 @ M		
Trichloroethene	<9 µg/kg	TM116		<180 @ #			
1,2-Dichloropropane	<10 µg/kg	TM116		<200 @ M			
Dibromomethane	<9 µg/kg	TM116		<180 @ M			
Bromodichloromethane	<7 µg/kg	TM116		<140 @ M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Toluene	<7 µg/kg	TM116	<140 @ M	<140 @ M	<7 @ M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<200 @ M			
1,3-Dichloropropane	<7 µg/kg	TM116		<140 @ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH14 F-04LHTB-MJ2Q 0.45 - 0.45 Soil/Solid (S) 23/08/2022 11:55 30/08/2022 220906-18 26831197 ES6	MS-BH14 F-0PMHTB-D37E 0.80 - 0.80 Soil/Solid (S) 23/08/2022 12:29 30/08/2022 220906-18 26831204 ES9	MS-BH14 F-FAJHTB-KVOS 1.20 - 1.20 Soil/Solid (S) 23/08/2022 11:25 30/08/2022 220906-18 26831162 ES12			
Component	LOD/Units	Method						
Tetrachloroethene	<5 µg/kg	TM116		<100				
				@ M				
Dibromochloromethane	<10 µg/kg	TM116		<200				
				@ M				
1,2-Dibromoethane	<10 µg/kg	TM116		<200				
				@ M				
Chlorobenzene	<5 µg/kg	TM116		<100				
				@ M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<200				
				@ M				
Ethylbenzene	<4 µg/kg	TM116	<80	<80	<4			
			@ M	@ M	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	<200	<10			
			@ #	@ #	@ #			
o-Xylene	<10 µg/kg	TM116	<200	<200	<10			
			@ M	@ M	@ M			
Styrene	<10 µg/kg	TM116		<200				
				@ #				
Bromofom	<10 µg/kg	TM116		<200				
				@ M				
Isopropylbenzene	<5 µg/kg	TM116		<100				
				@ #				
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<200				
				@ #				
1,2,3-Trichloropropane	<16 µg/kg	TM116		<320				
				@ M				
Bromobenzene	<10 µg/kg	TM116		<200				
				@ M				
Propylbenzene	<10 µg/kg	TM116		<200				
				@ M				
2-Chlorotoluene	<9 µg/kg	TM116		<180				
				@ M				
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<160				
				@ M				
4-Chlorotoluene	<10 µg/kg	TM116		<200				
				@ M				
tert-Butylbenzene	<14 µg/kg	TM116		<280				
				@ #				
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<180				
				@ #				
sec-Butylbenzene	<10 µg/kg	TM116		<200				
				@				
4-Isopropyltoluene	<10 µg/kg	TM116		<200				
				@				
1,3-Dichlorobenzene	<8 µg/kg	TM116		<160				
				@ M				
1,4-Dichlorobenzene	<5 µg/kg	TM116		<100				
				@ M				
n-Butylbenzene	<11 µg/kg	TM116		<220				
				@				
1,2-Dichlorobenzene	<10 µg/kg	TM116		<200				
				@ M				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<280				
				@ M				
Tert-amyl methyl ether	<10 µg/kg	TM116		<200				
				@ #				
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<400				
				@				
Hexachlorobutadiene	<20 µg/kg	TM116		<400				
				@				
Naphthalene	<13 µg/kg	TM116		<260				
				@ M				
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<400				
				@ #				
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<400				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH14ES6 0.45 - 0.45 SOLID 23/08/2022 00:00:00 30/08/2022 05:00:00 220906-18 26831197 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH14ES9 0.80 - 0.80 SOLID 23/08/2022 00:00:00 30/08/2022 05:00:00 220906-18 26831204 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH14ES12 1.20 - 1.20 SOLID 23/08/2022 00:00:00 30/08/2022 05:00:00 220906-18 26831162 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.233	Natural Moisture Content (%)	33.8
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	74.8
Particle Size <4mm	>95%		

Case	
SDG	220906-18
Lab Sample Number(s)	26831162
Sampled Date	23-Aug-2022
Customer Sample Ref.	MS-BH14 ES12
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	7.9	<0.001	-	-
Sulphate (soluble)	37.3	<2	74.6	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAf)	0.0000156	<0.00001	0.0000312	<0.00002
Total Organic Carbon	28.8	<9	57.6	<18
Ammoniacal Nitrogen as N	<0.01	<0.01	<0.02	<0.02
Arsenic	0.0036	<0.0005	0.0072	<0.001
Nitrate as NO3	2.82	<0.3	5.64	<0.6
Total Ammonium Low as NH4	<0.01	<0.01	<0.02	<0.02
Boron	0.0356	<0.01	0.0712	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.00217	<0.001	0.00434	<0.002
Copper	0.00549	<0.0003	0.011	<0.0006
Lead	0.00126	<0.0002	0.00252	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.00162	<0.001	0.00324	<0.002
Calcium (Dis.Filt) mg/l	34.7	<0.2	69.4	<0.4
Iron (Dis.Filt) mg/l	0.281	<0.019	0.562	<0.038
Hardness dissolved	92.3	<0.65	185	<1.3

PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	7.93
Conductivity (µS/cm)	180.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.292
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.233	Natural Moisture Content (%)	33.8
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	74.8
Particle Size <4mm	>95%		

Case	
SDG	220906-18
Lab Sample Number(s)	26831162
Sampled Date	23-Aug-2022
Customer Sample Ref.	MS-BH14 ES12
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	7.93
Conductivity (µS/cm)	180.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.292
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.3
Particle Size <4mm	>95%		

Case	
SDG	220906-18
Lab Sample Number(s)	26831197
Sampled Date	23-Aug-2022
Customer Sample Ref.	MS-BH14 ES6
Depth (m)	0.45 - 0.45

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8.3	<0.001	-	-
Sulphate (soluble)	75.3	<2	151	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	5.34	<3	10.7	<6
Ammoniacal Nitrogen as N	0.07	<0.01	0.14	<0.02
Arsenic	<0.0005	<0.0005	<0.001	<0.001
Nitrate as NO3	2.26	<0.3	4.52	<0.6
Total Ammonium Low as NH4	0.09	<0.01	0.18	<0.02
Boron	0.061	<0.01	0.122	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.00122	<0.001	0.00244	<0.002
Copper	0.00419	<0.0003	0.00838	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.0102	<0.001	0.0204	<0.002
Calcium (Dis.Filt) mg/l	66.2	<0.2	132	<0.4
Iron (Dis.Filt) mg/l	0.244	<0.019	0.488	<0.038
Hardness dissolved	179	<0.65	358	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00004	<0.00004	<0.00008	<0.00008
Acenaphthene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Acenaphthylene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Fluoranthene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Anthracene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Phenanthrene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Fluorene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Chrysene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Pyrene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Benz(a)anthracene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Benzo(b)fluoranthene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.21
Conductivity (µS/cm)	293.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.3
Particle Size <4mm	>95%		

Case	
SDG	220906-18
Lab Sample Number(s)	26831197
Sampled Date	23-Aug-2022
Customer Sample Ref.	MS-BH14 ES6
Depth (m)	0.45 - 0.45

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Benzo(a)pyrene by GCMS	<0.000008	<0.000008	<0.000016	<0.000016
Dibenzo(ah)anthracene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Benzo(ghi)perylene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Indeno(123cd)pyrene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
PAH 16 EPA Total by GCMS	<0.000328	<0.000328	<0.000656	<0.000656

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.21
Conductivity (µS/cm)	293.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-18
Client Ref.: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Test Completion Dates

Lab Sample No(s)	26831162	26831197	26831204
Customer Sample Ref.	MS-BH14	MS-BH14	MS-BH14
AGS Ref.	ES12	ES6	ES9
Depth	1.20 - 1.20	0.45 - 0.45	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low	14-Sep-2022	14-Sep-2022	
Ammonium Soil by Titration	08-Sep-2022	08-Sep-2022	08-Sep-2022
Anions by Kone (soil)	12-Sep-2022	12-Sep-2022	12-Sep-2022
Anions by Kone (w)	09-Sep-2022	09-Sep-2022	
Asbestos ID in Solid Samples	14-Sep-2022	14-Sep-2022	14-Sep-2022
CEN 2:1 Leachate (1 Stage)	07-Sep-2022	07-Sep-2022	
CEN Readings	12-Sep-2022	12-Sep-2022	
Chromium III	14-Sep-2022	14-Sep-2022	11-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022	12-Sep-2022	15-Sep-2022
Dissolved Metals by ICP-MS	15-Sep-2022	15-Sep-2022	
Easily Liberated Sulphide	13-Sep-2022	13-Sep-2022	13-Sep-2022
Elemental Sulphur	15-Sep-2022	15-Sep-2022	15-Sep-2022
EPH	12-Sep-2022	12-Sep-2022	12-Sep-2022
EPH by GCxGC-FID	08-Sep-2022	08-Sep-2022	08-Sep-2022
EPH CWG GC (S)			08-Sep-2022
GRO by GC-FID (S)	12-Sep-2022	12-Sep-2022	12-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022	08-Sep-2022	08-Sep-2022
Low Level Cyanide (W)	21-Sep-2022	21-Sep-2022	
Low Level Hexavalent Chromium (w)	10-Sep-2022	10-Sep-2022	
Mercury Dissolved	13-Sep-2022	13-Sep-2022	
Metals in solid samples by OES	12-Sep-2022	13-Sep-2022	12-Sep-2022
Moisture at 105C	07-Sep-2022	07-Sep-2022	
Nitrite by Kone (w)	08-Sep-2022	08-Sep-2022	
NO3, NO2 and TON by KONE (s)	12-Sep-2022	12-Sep-2022	12-Sep-2022
PAH by GCMS	08-Sep-2022	08-Sep-2022	08-Sep-2022
PAH Spec MS - Aqueous (W)	13-Sep-2022	13-Sep-2022	
pH	14-Sep-2022	14-Sep-2022	14-Sep-2022
pH Value of Filtered Water	12-Sep-2022	12-Sep-2022	
Phenols by HPLC (S)	14-Sep-2022	15-Sep-2022	15-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022	06-Sep-2022
Semi Volatile Organic Compounds			09-Sep-2022
Total Organic and Inorganic Carbon	09-Sep-2022	09-Sep-2022	
Total Organic Carbon	13-Sep-2022	14-Sep-2022	13-Sep-2022
Total Sulphate	12-Sep-2022	12-Sep-2022	12-Sep-2022
TPH CWG GC (S)			12-Sep-2022
VOC MS (S)	12-Sep-2022	13-Sep-2022	13-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220906-18
Client Ref: F212561

Report Number: 661972
Location: Keadby 3

Superseded Report: 661209

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 20 September 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220906-19
Your Reference: F212561
Location: Keadby 3
Report No: 661677
Order Number: 386/121917/CP

This report has been revised and directly supersedes 661272 in its entirety.

We received 3 samples on Tuesday August 30, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday September 20, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

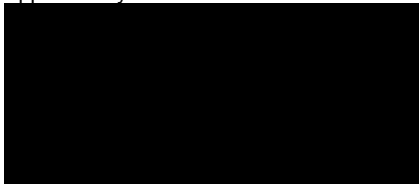
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831213	MS-BH03	ES1	0.10 - 0.10	25/08/2022
26831220	MS-BH03	ES4	0.30 - 0.30	25/08/2022
26831227	MS-BH03	ES8	0.80 - 0.80	25/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831213	MS-BH03	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
		26831220	MS-BH03	ES4	0.30 - 0.30	250g Amber Jar (ALE210)	S
		26831227	MS-BH03	ES8	0.80 - 0.80	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
					250g Amber Jar (ALE260)	S	
					60g VOC (ALE215)	S	
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2					



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SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831227	MS-BH03	ES8	0.80 - 0.80	60g VOC (ALE215)	S
		26831220	MS-BH03	ES4	0.30 - 0.30	250g Amber Jar (ALE210)	S
		26831213	MS-BH03	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					
PAH by GCMS	All	NDPs: 0 Tests: 2					
PCBs by GCMS	All	NDPs: 0 Tests: 1					
pH	All	NDPs: 0 Tests: 2					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2					
Sample description	All	NDPs: 0 Tests: 3					
Total Organic Carbon	All	NDPs: 0 Tests: 2					
Total Sulphate	All	NDPs: 0 Tests: 2					
TPH CWG GC (S)	All	NDPs: 0 Tests: 1					
VOC MS (S)	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831213	MS-BH03	0.10 - 0.10	Light Brown	Sandy Clay Loam	Vegetation	None
26831220	MS-BH03	0.30 - 0.30	Light Brown	Sandy Clay Loam	Stones	Vegetation
26831227	MS-BH03	0.80 - 0.80	Light Brown	Sand	None	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH03	MS-BH03		
#	ISO17025 accredited.		F-KFJTB-66BM	F-JGJTB-T05E	F-9HJTB-03HS		
M	mCERTS accredited.		0.10 - 0.10	0.30 - 0.30	0.80 - 0.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	25/08/2022	25/08/2022	25/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:15	10:20	13:15		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022	30/08/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-19	220906-19	220906-19		
(F)	Trigger breach confirmed	SDG Ref	26831213	26831220	26831227		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES8		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	14	13	14		
2,4,5-T*	<0.01 mg/kg	SUB		<0.01			
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB		<0.01			
2,4-D*	<0.01 mg/kg	SUB		<0.01			
2,4-DB*	<0.01 mg/kg	SUB		<0.01			
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB		<0.01			
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB		<0.01			
Acifluorfen*	<0.01 mg/kg	SUB		<0.01			
Bentazone*	<0.01 mg/kg	SUB		<0.01			
Bromoxynil*	<0.01 mg/kg	SUB		<0.01			
Dicamba*	<0.01 mg/kg	SUB		<0.01			
Diclofop*	<0.01 mg/kg	SUB		<0.01			
Dinoseb*	<0.01 mg/kg	SUB		<0.01			
DNOC*	<0.01 mg/kg	SUB		<0.01			
Fluroxypyr*	<0.01 mg/kg	SUB		<0.01			
loxynil*	<0.01 mg/kg	SUB		<0.01			
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB		<0.01			
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB		<0.01			
Mecoprop (MCP)*	<0.01 mg/kg	SUB		<0.01			
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB		<0.01			
Triclopyr*	<0.01 mg/kg	SUB		<0.01			
Triclosan*	<0.01 mg/kg	SUB		<0.01			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15		<15		
			M		M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12		<12		
			M		M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		
			@ M		@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		
			@ M		@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015		
			@ M		@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035		
			@ M		@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	3.91		<0.35		
			#		#		
pH	1 pH Units	TM133	8.15		8.47		
			M		M		
Sulphur, Elemental	<10 mg/kg	TM136	<10		<10		
			M		M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6		
			M		M		
Cyanide, Total	<1 mg/kg	TM153	<1		<1		
			@ M		@ M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

Results Legend		Customer Sample Ref.	MS-BH03 F-KFJTB-66BM 0.10 - 0.10 Soil/Solid (S) 25/08/2022 10:15 30/08/2022 220906-19 26831213 ES1	MS-BH03 F-JGJTB-T05E 0.30 - 0.30 Soil/Solid (S) 25/08/2022 10:20 30/08/2022 220906-19 26831220 ES4	MS-BH03 F-9HJTB-03HS 0.80 - 0.80 Soil/Solid (S) 25/08/2022 13:15 30/08/2022 220906-19 26831227 ES8		
Component	LOD/Units	Method					
Cyanide, Free	<1 mg/kg	TM153	<1 @ M		<1 @ M		
PCB congener 28	<3 µg/kg	TM168			<3 M		
PCB congener 52	<3 µg/kg	TM168			<3 M		
PCB congener 101	<3 µg/kg	TM168			<3 M		
PCB congener 118	<3 µg/kg	TM168			<3 M		
PCB congener 138	<3 µg/kg	TM168			<3 M		
PCB congener 153	<3 µg/kg	TM168			<3 M		
PCB congener 180	<3 µg/kg	TM168			<3 M		
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168			<21		
PCB congener 81	<3 µg/kg	TM168			<3 M		
PCB congener 77	<3 µg/kg	TM168			<3 M		
PCB congener 123	<3 µg/kg	TM168			<3 M		
PCB congener 114	<3 µg/kg	TM168			<3 M		
PCB congener 105	<3 µg/kg	TM168			<3 M		
PCB congener 126	<3 µg/kg	TM168			<3 M		
PCB congener 167	<3 µg/kg	TM168			<3 M		
PCB congener 156	<3 µg/kg	TM168			<3 M		
PCB congener 157	<3 µg/kg	TM168			<3 M		
PCB congener 169	<3 µg/kg	TM168			<3 M		
PCB congener 189	<3 µg/kg	TM168			<3 M		
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168			<36		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M		<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	17.2		6.63		
Arsenic	<0.6 mg/kg	TM181	14.9 M		1.44 M		
Boron	<0.7 mg/kg	TM181	14.3 #		1.18 #		
Cadmium	<0.02 mg/kg	TM181	0.219 M		0.0459 M		
Chromium	<0.9 mg/kg	TM181	17.2 M		6.63 M		
Copper	<1.4 mg/kg	TM181	17.4 M		4.97 M		
Iron	<1000 mg/kg	TM181	28700 #		4960 #		
Lead	<0.7 mg/kg	TM181	74 M		6.59 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M		<0.1 M		
Nickel	<0.2 mg/kg	TM181	27.3 M		8.7 M		
Selenium	<1 mg/kg	TM181	1.04 #		<1 #		



CERTIFICATE OF ANALYSIS

SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

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Table with 7 columns: Component, LOD/Units, Method, MS-BH03 (F-KFJTB-66BM), MS-BH03 (F-JGJTB-T05E), MS-BH03 (F-9HJTB-O3HS), and blank columns. Rows include Zinc, Sulphate, Nitrite, Nitrate, and EPH data.



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OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH03				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-JGJTB-T06E 0.30 - 0.30 Soil/Solid (S) 25/08/2022 10:20 30/08/2022 220906-19 26831220 ES4				
Component	LOD/Units	Method					
Dichlorvos	<50 µg/kg	TM073	<50				
Mevinphos	<50 µg/kg	TM073	<50				
Phorate	<50 µg/kg	TM073	<50				
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Diazinon	<50 µg/kg	TM073	<50				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50				
Disulfoton	<50 µg/kg	TM073	<50				
Heptachlor	<50 µg/kg	TM073	<50				
Aldrin	<50 µg/kg	TM073	<50				
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Methyl parathion	<50 µg/kg	TM073	<50				
Malathion	<50 µg/kg	TM073	<50				
Fenitrothion	<50 µg/kg	TM073	<50				
Heptachlor epoxide	<50 µg/kg	TM073	<50				
Parathion	<50 µg/kg	TM073	<50				
Endosulphan I	<50 µg/kg	TM073	<50				
p,p-DDE	<50 µg/kg	TM073	<50				
Dieldrin	<50 µg/kg	TM073	<50				
Endrin	<50 µg/kg	TM073	<50				
p,p-TDE (DDD)	<50 µg/kg	TM073	<50				
Ethion	<50 µg/kg	TM073	<50				
Endosulphan II	<50 µg/kg	TM073	<50				
p,p-DDT	<50 µg/kg	TM073	<150				
p,p-Methoxychlor	<50 µg/kg	TM073	<50				
Endosulphan sulphate	<50 µg/kg	TM073	<50				
Azinphos-methyl	<50 µg/kg	TM073	<50				



CERTIFICATE OF ANALYSIS

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SDG: 220906-19
Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH03			
#	ISO17025 accredited.		F-KFJTB-66BM	F-9HJTB-03HS			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	25/08/2022	25/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:15	13:15			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-19	220906-19			
(F)	Trigger breach confirmed	SDG Ref	26831213	26831227			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES8			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	95.9	90.6			
Acenaphthene-d10 % recovery**	%	TM218	101	90			
Phenanthrene-d10 % recovery**	%	TM218	105	96.2			
Chrysene-d12 % recovery**	%	TM218	108	104			
Perylene-d12 % recovery**	%	TM218	88.7	89.2			
Naphthalene	<9 µg/kg	TM218	22.4	<9			
			M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	@ M			
Phenanthrene	<15 µg/kg	TM218	87.2	<15			
			M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	@ M			
Fluoranthene	<17 µg/kg	TM218	96.8	<17			
			M	@ M			
Pyrene	<15 µg/kg	TM218	85.8	<15			
			M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	37.6	<14			
			M	@ M			
Chrysene	<10 µg/kg	TM218	54.9	<10			
			M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	70.9	<15			
			M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	18.9	<14			
			M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	31.6	<15			
			M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	24.1	<18			
			M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	33.5	<24			
			M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	564	<118			



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Client Ref.: F212561

Report Number: 661677
Location: Keadby 3

Superseded Report: 661272

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH03							
M mCERTS accredited.		F-9HJTB-03HS							
aq Aqueous / settled sample.		0.80 - 0.80							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		25/08/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		13:15							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		30/08/2022							
(F) Trigger breach confirmed		220906-19							
1-4* @ Sample deviation (see appendix)		26831227							
		ES8							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	96.1	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	#					
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000	#					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	#					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000	#					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



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Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH03				
#	ISO17025 accredited.		F-KFJTB-66BM	F-9HJTB-03HS				
M	mCERTS accredited.	Depth (m)	0.10 - 0.10	0.80 - 0.80				
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Date Sampled	25/08/2022	25/08/2022				
tot.unfilt	Total / unfiltered sample.	Date Received	10:15	13:15				
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-19	220906-19				
(F)	Trigger breach confirmed	SDG Ref	26831213	26831227				
1-4*#@	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES8				
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	103 @	108 @				
Toluene-d8**	%	TM116	95.4 @	97.1 @				
4-Bromofluorobenzene**	%	TM116	92.2 @	92.4 @				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<10 @ M				
Benzene	<9 µg/kg	TM116	<180 @ M	<9 @ M				
Toluene	<7 µg/kg	TM116	<140 @ M	<7 @ M				
Ethylbenzene	<4 µg/kg	TM116	<80 @ M	<4 @ M				
p/m-Xylene	<10 µg/kg	TM116	<200 @ #	<10 @ #				
o-Xylene	<10 µg/kg	TM116	<200 @ M	<10 @ M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.02 @				
Sum of BTEX	<40 µg/kg	TM116	<800 @	<40 @				



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Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH03ES1 0.10 - 0.10 SOLID 25/08/2022 00:00:00 30/08/2022 05:00:00 220906-19 26831213 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH03ES8 0.80 - 0.80 SOLID 25/08/2022 00:00:00 30/08/2022 05:00:00 220906-19 26831227 TM048	14/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



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Test Completion Dates

Lab Sample No(s)	26831213	26831220	26831227
Customer Sample Ref.	MS-BH03	MS-BH03	MS-BH03
AGS Ref.	ES1	ES4	ES8
Depth	0.10 - 0.10	0.30 - 0.30	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*		20-Sep-2022	
Ammonium Soil by Titration	08-Sep-2022		08-Sep-2022
Anions by Kone (soil)	12-Sep-2022		12-Sep-2022
Asbestos ID in Solid Samples	14-Sep-2022		14-Sep-2022
Chromium III	11-Sep-2022		11-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022		12-Sep-2022
Easily Liberated Sulphide	13-Sep-2022		13-Sep-2022
Elemental Sulphur	15-Sep-2022		15-Sep-2022
EPH	12-Sep-2022		12-Sep-2022
EPH by GCxGC-FID	08-Sep-2022		08-Sep-2022
EPH CWG GC (S)			08-Sep-2022
GRO by GC-FID (S)	12-Sep-2022		12-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022		08-Sep-2022
Metals in solid samples by OES	12-Sep-2022		12-Sep-2022
NO3, NO2 and TON by KONE (s)	12-Sep-2022		12-Sep-2022
OC OP Pesticides and Triazine Herb		09-Sep-2022	
PAH by GCMS	09-Sep-2022		09-Sep-2022
PCBs by GCMS			09-Sep-2022
pH	14-Sep-2022		14-Sep-2022
Phenols by HPLC (S)	14-Sep-2022		15-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022	06-Sep-2022
Total Organic Carbon	13-Sep-2022		13-Sep-2022
Total Sulphate	12-Sep-2022		12-Sep-2022
TPH CWG GC (S)			12-Sep-2022
VOC MS (S)	13-Sep-2022		12-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2289819	Issue Date	: 20-Sep-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220906-19	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 09-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 09-Sep-2022 - 20-Sep-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

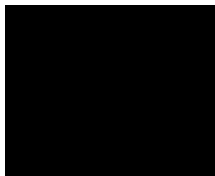
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26834247		----		----	
				Laboratory sample ID		MS-BH03		----		----	
				Client sampling date / time		PR2289819001		----		----	
						06-Sep-2022 11:57		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	83.1	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxylinil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



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Location: Keadby 3

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Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220906-20
Your Reference:	F212561
Location:	Keadby 3
Report No:	661973
Order Number:	386/121917/CP

This report has been revised and directly supersedes 661678 in its entirety.

We received 4 samples on Tuesday August 30, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 21, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

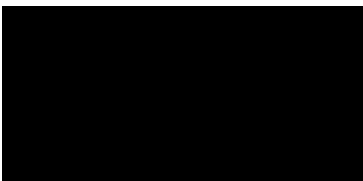
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831241	MS-BH16	ES2	0.10 - 0.10	25/08/2022
26831248	MS-BH16	ES4	0.45 - 0.45	25/08/2022
26831255	MS-BH16	ES7	0.80 - 0.80	25/08/2022
26831234	MS-BH16	ES10	1.20 - 1.20	25/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831241	MS-BH16	ES2	0.10 - 0.10	1kg TUB with Handle (ALE210)	S
		26831248	MS-BH16	ES4	0.45 - 0.45	250g Amber Jar (ALE210)	S
		26831255	MS-BH16	ES7	0.80 - 0.80	60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Low	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Anions by Kone (w)	All	NDPs: 0 Tests: 1					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
CEN Readings	All	NDPs: 0 Tests: 1					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	26831241	26831248	26831255
Customer Sample Reference	MS-BH16	MS-BH16	MS-BH16
AGS Reference	ES2	ES4	ES7
Depth (m)	0.10 - 0.10	0.45 - 0.45	0.80 - 0.80
Container	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210)	250g Amber Jar (ALE210) 60g VOC (ALE215)
Sample Type	S	S	S

Parameter	All	NDPs: 0 Tests: 2	26831241	26831248	26831255
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2		X	X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1	X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1	X		
Mercury Dissolved	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2		X	X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2		X	X
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 2		X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 2		X	X
pH Value of Filtered Water	All	NDPs: 0 Tests: 1	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2		X	X
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

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SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Results Legend			26831241	26831248	26831255			
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)							
	Customer Sample Reference			MS-BH16	MS-BH16	MS-BH16		
	AGS Reference			ES2	ES4	ES7		
	Depth (m)			0.10 - 0.10	0.45 - 0.45	0.80 - 0.80		
	Container			1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type			S	S	S	S	S
	Total Organic Carbon	All	NDPs: 0 Tests: 2		X		X	
Total Sulphate	All	NDPs: 0 Tests: 2		X		X		
VOC MS (S)	All	NDPs: 0 Tests: 2			X		X	



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SDG: 220906-20
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Location: Keadby 3

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831241	MS-BH16	0.10 - 0.10	Dark Brown	Sandy Silt Loam	Stones	Vegetation
26831248	MS-BH16	0.45 - 0.45	Dark Brown	Sandy Clay Loam	Stones	Vegetation
26831255	MS-BH16	0.80 - 0.80	Light Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

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Results Legend		Customer Sample Ref.	MS-BH16	MS-BH16	MS-BH16		
#	ISO17025 accredited.		F-KPLJTB-C1YM	F-3WJTB-4ADY	F-VDJTB-H72A		
M	mCERTS accredited.		0.10 - 0.10	0.45 - 0.45	0.80 - 0.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	25/08/2022	25/08/2022	25/08/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:50	11:05	11:20		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022	30/08/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-20	220906-20	220906-20		
(F)	Trigger breach confirmed	SDG Ref	26831241	26831248	26831255		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	11	12	16		
2,4,5-T*	<0.01 mg/kg	SUB	<0.01				
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01				
2,4-D*	<0.01 mg/kg	SUB	<0.01				
2,4-DB*	<0.01 mg/kg	SUB	<0.01				
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01				
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01				
Acifluorfen*	<0.01 mg/kg	SUB	<0.01				
Bentazone*	<0.01 mg/kg	SUB	<0.01				
Bromoxynil*	<0.01 mg/kg	SUB	<0.01				
Dicamba*	<0.01 mg/kg	SUB	<0.01				
Diclofop*	<0.01 mg/kg	SUB	<0.01				
Dinoseb*	<0.01 mg/kg	SUB	<0.01				
DNOC*	<0.01 mg/kg	SUB	<0.01				
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01				
loxylnil*	<0.01 mg/kg	SUB	<0.01				
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01				
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01				
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01				
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01				
Triclopyr*	<0.01 mg/kg	SUB	<0.01				
Triclosan*	<0.01 mg/kg	SUB	<0.01				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024		<15	<15		
				M	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12		
				M	M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01		
				@ M	@ M		
Cresols	<0.01 mg/kg	TM062 (S)		0.0114	<0.01		
				@ M	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015		
				@ M	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035		
				@ M	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132		6.14	2.03		
				#	#		
pH	1 pH Units	TM133		8.34	8.87		
				M	M		
Sulphur, Elemental	<10 mg/kg	TM136		25.4	97.8		
				M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6	<0.6		
				M	M		
Cyanide, Total	<1 mg/kg	TM153		<1	<1		
				@ M	@ M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Results Legend		Customer Sample Ref.	MS-BH16	MS-BH16	MS-BH16			
#	ISO17025 accredited.		F-KPIJTB-C1YM	F-3WJTB-4ADY	F-VDIJB-H72A			
M	mCERTS accredited.	Depth (m)	0.10 - 0.10	0.45 - 0.45	0.80 - 0.80			
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
dis.filter	Dissolved / filtered sample.	Date Sampled	25/08/2022	25/08/2022	25/08/2022			
tot.unfilt	Total / unfiltered sample.	Sample Time	10:50	11:05	11:20			
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Received	30/08/2022	30/08/2022	30/08/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	220906-20	220906-20	220906-20			
(F)	Trigger breach confirmed	Lab Sample No.(s)	26831241	26831248	26831255			
1-4*#@	Sample deviation (see appendix)	AGS Reference	ES2	ES4	ES7			
Component	LOD/Units	Method						
Cyanide, Free	<1 mg/kg	TM153		<1	<1			
				@ M	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180		<15	62.9			
				@ M	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181		33	17.8			
Arsenic	<0.6 mg/kg	TM181		12.5	10.3			
				M	M			
Boron	<0.7 mg/kg	TM181		14.2	20			
				#	#			
Cadmium	<0.02 mg/kg	TM181		0.233	0.176			
				M	M			
Chromium	<0.9 mg/kg	TM181		33	17.8			
				M	M			
Copper	<1.4 mg/kg	TM181		23.7	17.1			
				M	M			
Iron	<1000 mg/kg	TM181		22300	23800			
				#	#			
Lead	<0.7 mg/kg	TM181		38.9	46.5			
				M	M			
Mercury	<0.1 mg/kg	TM181		<0.1	<0.1			
				M	M			
Nickel	<0.2 mg/kg	TM181		18.5	18.6			
				M	M			
Selenium	<1 mg/kg	TM181		1.79	1.66			
				#	#			
Zinc	<1.9 mg/kg	TM181		104	84.3			
				M	M			
Sulphate, Total	<48 mg/kg	TM221		3560	3040			
				M	M			
Total Sulphur (ASB)	<0.0016 %	TM221		0.119	0.101			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243		0.58	1.04			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.35	0.332			
				M	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243		8.84	17.1			
EPH (C5-C40)	<35 mg/kg	TM415		146	76.3			
EPH Surrogate % recovery**	%	TM415		107	99.1			
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415		146	76.3			
				M	M			



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OC OP Pesticides and Triazine Herb

Component	LOD/Units	Method	Customer Sample Ref.	MS-BH16			
				F-KPLUTB-C1YM			
Dichlorvos	<50 µg/kg	TM073		0.10 - 0.10			
Mevinphos	<50 µg/kg	TM073		Soil/Solid (S)			
Phorate	<50 µg/kg	TM073		25/08/2022			
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073		10:50			
Diazinon	<50 µg/kg	TM073		30/08/2022			
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073		220906-20			
Disulfoton	<50 µg/kg	TM073		26831241			
Heptachlor	<50 µg/kg	TM073		ES2			
Aldrin	<50 µg/kg	TM073					
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073					
Methyl parathion	<50 µg/kg	TM073					
Malathion	<50 µg/kg	TM073					
Fenitrothion	<50 µg/kg	TM073					
Heptachlor epoxide	<50 µg/kg	TM073					
Parathion	<50 µg/kg	TM073					
Endosulphan I	<50 µg/kg	TM073					
p,p-DDE	<50 µg/kg	TM073					
Dieldrin	<50 µg/kg	TM073					
Endrin	<50 µg/kg	TM073					
p,p-TDE (DDD)	<50 µg/kg	TM073					
Ethion	<50 µg/kg	TM073					
Endosulphan II	<50 µg/kg	TM073					
p,p-DDT	<50 µg/kg	TM073		<150			
p,p-Methoxychlor	<50 µg/kg	TM073		<50			
Endosulphan sulphate	<50 µg/kg	TM073		<50			
Azinphos-methyl	<50 µg/kg	TM073		<50			



CERTIFICATE OF ANALYSIS

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SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH16	MS-BH16			
#	ISO17025 accredited.		F-3WJTB-4ADY	F-VDJTB-H72A			
M	mCERTS accredited.		0.45 - 0.45	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	25/08/2022	25/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:05	11:20			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-20	220906-20			
	(F) Trigger breach confirmed	SDG Ref	26831248	26831255			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	82.8	84.5			
Acenaphthene-d10 % recovery**	%	TM218	85.5	87.8			
Phenanthrene-d10 % recovery**	%	TM218	85.3	88.4			
Chrysene-d12 % recovery**	%	TM218	80.6	80.7			
Perylene-d12 % recovery**	%	TM218	75.1	76.1			
Naphthalene	<9 µg/kg	TM218	51.3	68.8			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	30.9	15.3			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<16	54			
			M	M			
Fluorene	<10 µg/kg	TM218	<20	45.2			
			M	M			
Phenanthrene	<15 µg/kg	TM218	288	508			
			M	M			
Anthracene	<16 µg/kg	TM218	90.4	144			
			M	M			
Fluoranthene	<17 µg/kg	TM218	893	991			
			M	M			
Pyrene	<15 µg/kg	TM218	812	850			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	455	416			
			M	M			
Chrysene	<10 µg/kg	TM218	464	393			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	617	475			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	232	153			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	451	307			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	347	222			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	55.5	39.7			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	281	173			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	5070	4850			



CERTIFICATE OF ANALYSIS

SDG: 220906-20
 Client Ref.: F212561

Report Number: 661973
 Location: Keadby 3

Superseded Report: 661678

VOC MS (S)

Results Legend		Customer Sample Ref.		MS-BH16	MS-BH16			
#	ISO17025 accredited.			F-3WJTB-4ADY	F-VDJTB-H72A			
M	mCERTS accredited.			0.45 - 0.45	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)		Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type		25/08/2022	25/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled		11:05	11:20			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time		30/08/2022	30/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received		220906-20	220906-20			
(F)	Trigger breach confirmed	SDG Ref		26831248	26831255			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)		ES4	ES7			
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	109		103			
			@		@			
Toluene-d8**	%	TM116	95.2		93.8			
			@		@			
4-Bromofluorobenzene**	%	TM116	84.2		92.3			
			@		@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100		<200			
			@ M		@ M			
Benzene	<9 µg/kg	TM116	<90		<180			
			@ M		@ M			
Toluene	<7 µg/kg	TM116	<70		<140			
			@ M		@ M			
Ethylbenzene	<4 µg/kg	TM116	<40		<80			
			@ M		@ M			
p/m-Xylene	<10 µg/kg	TM116	<100		<200			
			@ #		@ #			
o-Xylene	<10 µg/kg	TM116	<100		<200			
			@ M		@ M			
Sum of BTEX	<40 µg/kg	TM116	<400		<800			
			@		@			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH16ES2 0.10 - 0.10 SOLID 25/08/2022 00:00:00 30/08/2022 05:00:00 220906-20 26831241 TM048	14/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH16ES4 0.45 - 0.45 SOLID 25/08/2022 00:00:00 30/08/2022 05:00:00 220906-20 26831248 TM048	14/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Validated

SDG: 220906-20
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Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.203	Natural Moisture Content (%)	15.7
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	86.4
Particle Size <4mm	>95%		

Case	
SDG	220906-20
Lab Sample Number(s)	26831248
Sampled Date	25-Aug-2022
Customer Sample Ref.	MS-BH16 ES4
Depth (m)	0.45 - 0.45

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8.4	<0.001	-	-
Sulphate (soluble)	285	<2	570	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	10.2	<3	20.4	<6
Ammoniacal Nitrogen as N	0.036	<0.01	0.072	<0.02
Arsenic	0.00285	<0.0005	0.0057	<0.001
Nitrate as NO3	5.78	<0.3	11.6	<0.6
Total Ammonium Low as NH4	0.463	<0.01	0.926	<0.02
Boron	0.168	<0.01	0.336	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0012	<0.001	0.0024	<0.002
Copper	0.0081	<0.0003	0.0162	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.00192	<0.0004	0.00384	<0.0008
Selenium	0.00102	<0.001	0.00204	<0.002
Zinc	0.00813	<0.001	0.0163	<0.002
Calcium (Dis.Filt) mg/l	143	<0.2	286	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	430	<0.65	860	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Acenaphthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Phenanthrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluorene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Chrysene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.35
Conductivity (µS/cm)	638.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.321
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

21/09/2022 15:14:43

15:14:26 21/09/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.203	Natural Moisture Content (%)	15.7
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	86.4
Particle Size <4mm	>95%		

Case	
SDG	220906-20
Lab Sample Number(s)	26831248
Sampled Date	25-Aug-2022
Customer Sample Ref.	MS-BH16 ES4
Depth (m)	0.45 - 0.45

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.000008	<0.000008
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.000328	<0.000328

Leach Test Information

Date Prepared	07-Sep-2022
pH (pH Units)	8.35
Conductivity (µS/cm)	638.00
Temperature (°C)	20.40
Volume Leachant (Litres)	0.321
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation

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Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



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SDG: 220906-20
Client Ref.: F212561

Report Number: 661973
Location: Keadby 3

Superseded Report: 661678

Test Completion Dates

Lab Sample No(s)	26831241	26831248	26831255
Customer Sample Ref.	MS-BH16	MS-BH16	MS-BH16
AGS Ref.	ES2	ES4	ES7
Depth	0.10 - 0.10	0.45 - 0.45	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	20-Sep-2022		
Ammonium Low		14-Sep-2022	
Ammonium Soil by Titration		08-Sep-2022	12-Sep-2022
Anions by Kone (soil)		12-Sep-2022	12-Sep-2022
Anions by Kone (w)		09-Sep-2022	
Asbestos ID in Solid Samples	14-Sep-2022	14-Sep-2022	
CEN 2:1 Leachate (1 Stage)		07-Sep-2022	
CEN Readings		12-Sep-2022	
Chromium III		12-Sep-2022	09-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate		12-Sep-2022	12-Sep-2022
Dissolved Metals by ICP-MS		12-Sep-2022	
Easily Liberated Sulphide		13-Sep-2022	13-Sep-2022
Elemental Sulphur		15-Sep-2022	15-Sep-2022
EPH		14-Sep-2022	12-Sep-2022
EPH by GCxGC-FID		08-Sep-2022	08-Sep-2022
GRO by GC-FID (S)		14-Sep-2022	12-Sep-2022
Hexavalent Chromium (s)		08-Sep-2022	08-Sep-2022
Low Level Cyanide (W)		21-Sep-2022	
Low Level Hexavalent Chromium (w)		10-Sep-2022	
Mercury Dissolved		13-Sep-2022	
Metals in solid samples by OES		12-Sep-2022	09-Sep-2022
Moisture at 105C		07-Sep-2022	
Nitrite by Kone (w)		08-Sep-2022	
NO3, NO2 and TON by KONE (s)		12-Sep-2022	12-Sep-2022
OC OP Pesticides and Triazine Herb	09-Sep-2022		
PAH by GCMS		08-Sep-2022	08-Sep-2022
PAH Spec MS - Aqueous (W)		12-Sep-2022	
pH		14-Sep-2022	09-Sep-2022
pH Value of Filtered Water		12-Sep-2022	
Phenols by HPLC (S)		14-Sep-2022	15-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022	06-Sep-2022
Total Organic and Inorganic Carbon		09-Sep-2022	
Total Organic Carbon		13-Sep-2022	14-Sep-2022
Total Sulphate		12-Sep-2022	12-Sep-2022
VOC MS (S)		14-Sep-2022	13-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2289820	Issue Date	: 20-Sep-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220906-20	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 09-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 09-Sep-2022 - 20-Sep-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

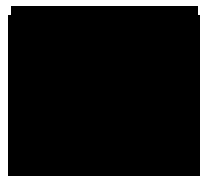
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26834039		----		----	
				Laboratory sample ID		MS-BH16		----		----	
				Client sampling date / time		PR2289820001		----		----	
						06-Sep-2022 11:45		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	87.0	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Ioxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



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Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220906-21
Your Reference:	F212561
Location:	Keadby 3
Report No:	661277
Order Number:	386/121917/CP

We received 2 samples on Tuesday August 30, 2022 and 1 of these samples were scheduled for analysis which was completed on Thursday September 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

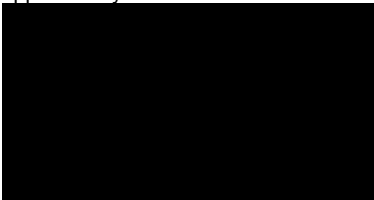
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831263	MS-BH16	ES13	1.40 - 1.40	26/08/2022
26831270	MS-BH16	ES16	1.90 - 1.90	26/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center; font-size: 8px;">X</div> Test </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center; font-size: 8px;">N</div> No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26831270	
	Customer Sample Reference	MS-BH16	
	AGS Reference	ES16	
	Depth (m)	1.90 - 1.90	
	Container	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S

Analyte	All	NDPs: 0 Tests: 1			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	26831270	MS-BH16	ES16	1.90 - 1.90	60g VOC (ALE215) 250g Amber Jar (ALE210)	S S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1				X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831270	MS-BH16	1.90 - 1.90	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.		MS-BH16							
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		F-KI0LTB-MPUP 1.90 - 1.90 Soil/Solid (S) 26/08/2022 08:20 30/08/2022 220906-21 26831270 ES16							
Component	LOD/Units	Method									
Moisture Content Ratio (% of as received sample)	%	PM024	23								
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15		M						
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12		M						
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		@ M						
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		@ M						
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		@ M						
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		@ M						
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35		#						
pH	1 pH Units	TM133	7.45		M						
Sulphur, Elemental	<10 mg/kg	TM136	<10		M						
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		M						
Cyanide, Total	<1 mg/kg	TM153	<1		M						
Cyanide, Free	<1 mg/kg	TM153	<1		M						
Sulphide, Easily liberated	<15 mg/kg	TM180	<15		@ M						
Chromium, Trivalent	<0.9 mg/kg	TM181	6.65								
Arsenic	<0.6 mg/kg	TM181	1.78		M						
Boron	<0.7 mg/kg	TM181	2.34		#						
Cadmium	<0.02 mg/kg	TM181	0.0538		M						
Chromium	<0.9 mg/kg	TM181	6.65		M						
Copper	<1.4 mg/kg	TM181	5.75		M						
Iron	<1000 mg/kg	TM181	5040		#						
Lead	<0.7 mg/kg	TM181	4.72		M						
Mercury	<0.1 mg/kg	TM181	<0.1		M						
Nickel	<0.2 mg/kg	TM181	8.13		M						
Selenium	<1 mg/kg	TM181	<1		#						
Zinc	<1.9 mg/kg	TM181	15		M						
Sulphate, Total	<48 mg/kg	TM221	102		M						
Total Sulphur (ASB)	<0.0016 %	TM221	0.0034								
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1								
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0422		M						
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1								
EPH (C5-C40)	<35 mg/kg	TM415	<35								
EPH Surrogate % recovery**	%	TM415	76								



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH16				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-KIQLTB-MPUP				
M	mCERTS accredited.		1.90 - 1.90				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		26/08/2022				
tot.unfilt	Total / unfiltered sample.		08:20				
*	Subcontracted - refer to subcontractor report for accreditation status.		30/08/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		220906-21				
(F)	Trigger breach confirmed		26831270				
1-4*\$@	Sample deviation (see appendix)		ES16				
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	83.7				
Acenaphthene-d10 % recovery**	%	TM218	85.3				
Phenanthrene-d10 % recovery**	%	TM218	84.2				
Chrysene-d12 % recovery**	%	TM218	78.8				
Perylene-d12 % recovery**	%	TM218	76				
Naphthalene	<9 µg/kg	TM218	<9				
				M			
Acenaphthylene	<12 µg/kg	TM218	<12				
				M			
Acenaphthene	<8 µg/kg	TM218	<8				
				M			
Fluorene	<10 µg/kg	TM218	<10				
				M			
Phenanthrene	<15 µg/kg	TM218	36.6				
				M			
Anthracene	<16 µg/kg	TM218	<16				
				M			
Fluoranthene	<17 µg/kg	TM218	70.7				
				M			
Pyrene	<15 µg/kg	TM218	63.2				
				M			
Benz(a)anthracene	<14 µg/kg	TM218	34				
				M			
Chrysene	<10 µg/kg	TM218	31.7				
				M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	36.6				
				M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14				
				M			
Benzo(a)pyrene	<15 µg/kg	TM218	23.7				
				M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18				
				M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23				
				M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24				
				M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	297				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH16 F-KIOLTB-MPUP 1.90 - 1.90 Soil/Solid (S) 26/08/2022 08:20 30/08/2022 220906-21 26831270 ES16			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4* Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH16 F-KIQLTB-MPUP 1.90 - 1.90 Soil/Solid (S) 26/08/2022 08:20 30/08/2022 220906-21 26831270 ES16				
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.		MS-BH16							
#	ISO17025 accredited.				F-KIOLT-MPUP						
M	mCERTS accredited.				1.90 - 1.90						
aq	Aqueous / settled sample.				Soil/Solid (S)						
diss.filt	Dissolved / filtered sample.				26/08/2022						
tot.unfilt	Total / unfiltered sample.				08:20						
	* Subcontracted - refer to subcontractor report for accreditation status.				30/08/2022						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				220906-21						
(F)	Trigger breach confirmed				26831270						
1-4*§	Sample deviation (see appendix)				ES16						
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference	
GRO Surrogate % recovery**	%	TM089									
											@
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089									
											@
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089									
											@
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089									
											@
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414									#
											#
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414									#
											#
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414									#
											#
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414									#
											#
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414									#
											#
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414									#
											#
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414									#
											#
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089									@
											@
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089									@
											@
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089									@
											@
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414									#
											#
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414									#
											#
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414									#
											#
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414									#
											#
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414									1170
											1170
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414									<1000
											<1000
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414									<5000
											<5000
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414									<10000
											<10000
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089									<50
											@
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089									<50
											@
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089									<20
											@



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH16					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-KIOLTB-MPUP					
M	mCERTS accredited.		1.90 - 1.90					
aq	Aqueous / settled sample.		Soil/Solid (S)					
dis.s.filt	Dissolved / filtered sample.		26/08/2022					
tot.unfilt	Total / unfiltered sample.		08:20					
*	Subcontracted - refer to subcontractor report for accreditation status.		30/08/2022					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		220906-21					
(F)	Trigger breach confirmed		26831270					
1-4*§@	Sample deviation (see appendix)		ES16					
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM116	105	@				
Toluene-d8**	%	TM116	96.6	@				
4-Bromofluorobenzene**	%	TM116	87.3	@				
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	@ #				
Chloromethane	<7 µg/kg	TM116	<7	@ #				
Vinyl Chloride	<6 µg/kg	TM116	<6	@ M				
Bromomethane	<10 µg/kg	TM116	<10	@ M				
Chloroethane	<10 µg/kg	TM116	<10	@ M				
Trichlorofluoromethane	<6 µg/kg	TM116	<6	@ M				
1,1-Dichloroethene	<10 µg/kg	TM116	<10	@ #				
Carbon Disulphide	<7 µg/kg	TM116	<7	@ M				
Dichloromethane	<10 µg/kg	TM116	<15	@ #				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	@ M				
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	@ M				
1,1-Dichloroethane	<8 µg/kg	TM116	<8	@ M				
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6	@ M				
2,2-Dichloropropane	<10 µg/kg	TM116	<10	@				
Bromochloromethane	<10 µg/kg	TM116	<10	@ M				
Chloroform	<8 µg/kg	TM116	<8	@ M				
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7	@ M				
1,1-Dichloropropene	<10 µg/kg	TM116	<10	@ M				
Carbontetrachloride	<10 µg/kg	TM116	<10	@ M				
1,2-Dichloroethane	<5 µg/kg	TM116	<5	@ M				
Benzene	<9 µg/kg	TM116	<9	@ M				
Trichloroethene	<9 µg/kg	TM116	<9	@ #				
1,2-Dichloropropane	<10 µg/kg	TM116	<10	@ M				
Dibromomethane	<9 µg/kg	TM116	<9	@ M				
Bromodichloromethane	<7 µg/kg	TM116	<7	@ M				
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	@ M				
Toluene	<7 µg/kg	TM116	<7	@ M				
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	@				
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	@ M				
1,3-Dichloropropane	<7 µg/kg	TM116	<7	@ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH16 F-KIQLTB-MPUP 1.90 - 1.90 Soil/Solid (S) 26/08/2022 08:20 30/08/2022 220906-21 26831270 ES16				
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116	<5	@ M			
Dibromochloromethane	<10 µg/kg	TM116	<10	@ M			
1,2-Dibromoethane	<10 µg/kg	TM116	<10	@ M			
Chlorobenzene	<5 µg/kg	TM116	<5	@ M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	@ M			
Ethylbenzene	<4 µg/kg	TM116	<4	@ M			
p/m-Xylene	<10 µg/kg	TM116	<10	@ #			
o-Xylene	<10 µg/kg	TM116	<10	@ M			
Styrene	<10 µg/kg	TM116	<10	@ #			
Bromofom	<10 µg/kg	TM116	<10	@ M			
Isopropylbenzene	<5 µg/kg	TM116	<5	@ #			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	@ #			
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	@ M			
Bromobenzene	<10 µg/kg	TM116	<10	@ M			
Propylbenzene	<10 µg/kg	TM116	<10	@ M			
2-Chlorotoluene	<9 µg/kg	TM116	<9	@ M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	@ M			
4-Chlorotoluene	<10 µg/kg	TM116	<10	@ M			
tert-Butylbenzene	<14 µg/kg	TM116	<14	@ #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	@ #			
sec-Butylbenzene	<10 µg/kg	TM116	<10	@			
4-Isopropyltoluene	<10 µg/kg	TM116	<10	@			
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	@ M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	@ M			
n-Butylbenzene	<11 µg/kg	TM116	<11	@			
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	@ M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	@ M			
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	@ #			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	@			
Hexachlorobutadiene	<20 µg/kg	TM116	<20	@			
Naphthalene	<13 µg/kg	TM116	<13	@ M			
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20	@ #			
1,3,5-Trichlorobenzene	<20 µg/kg	TM116	<20	@ #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-21
Client Ref.: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26831270
Customer Sample Ref.	MS-BH16
AGS Ref.	ES16
Depth	1.90 - 1.90
Type	Soil/Solid (S)

Ammonium Soil by Titration	12-Sep-2022
Anions by Kone (soil)	12-Sep-2022
Chromium III	11-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022
Easily Liberated Sulphide	13-Sep-2022
Elemental Sulphur	15-Sep-2022
EPH	12-Sep-2022
EPH by GCxGC-FID	08-Sep-2022
EPH CWG GC (S)	08-Sep-2022
GRO by GC-FID (S)	12-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022
Metals in solid samples by OES	12-Sep-2022
NO3, NO2 and TON by KONE (s)	12-Sep-2022
PAH by GCMS	08-Sep-2022
pH	09-Sep-2022
Phenols by HPLC (S)	15-Sep-2022
Sample description	06-Sep-2022
Semi Volatile Organic Compounds	09-Sep-2022
Total Organic Carbon	14-Sep-2022
Total Sulphate	12-Sep-2022
TPH CWG GC (S)	12-Sep-2022
VOC MS (S)	12-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220906-21
Client Ref: F212561

Report Number: 661277
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220906-23
Your Reference:	F212561
Location:	Keadby 3
Report No:	661267
Order Number:	386/121917/CP

This report has been revised and directly supersedes 661206 in its entirety.

We received 3 samples on Tuesday August 30, 2022 and 2 of these samples were scheduled for analysis which was completed on Thursday September 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

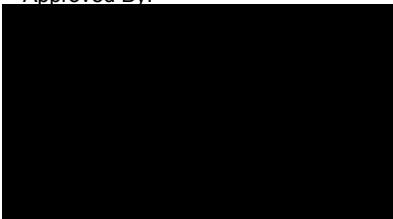
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831286	MS-BH01	ES1	0.10 - 0.10	26/08/2022
26831294	MS-BH01	ES4	0.35 - 0.35	26/08/2022
26831314	MS-BH01	ES7	0.55 - 0.55	26/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831286	MS-BH01	ES1	0.10 - 0.10	60g VOC (ALE215)	S
		26831294	MS-BH01	ES4	0.35 - 0.35	250g Amber Jar (ALE210)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X				
Chromium III	All	NDPs: 0 Tests: 2	X	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X	X			
Elemental Sulphur	All	NDPs: 0 Tests: 2	X	X			
EPH	All	NDPs: 0 Tests: 2	X	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X	X			
EPH CWG GC (S)	All	NDPs: 0 Tests: 1		X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X	X		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X	X			
PAH by GCMS	All	NDPs: 0 Tests: 2	X	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26831286	26831294			
	Customer Sample Reference	MS-BH01	MS-BH01			
	AGS Reference	ES1	ES1	ES4		
	Depth (m)	0.10 - 0.10	0.10 - 0.10	0.35 - 0.35		
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S
pH	All	NDPs: 0 Tests: 2		X	X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2		X	X	
Sample description	All	NDPs: 0 Tests: 2		X	X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1			X	
Total Organic Carbon	All	NDPs: 0 Tests: 2		X	X	
Total Sulphate	All	NDPs: 0 Tests: 2		X	X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831286	MS-BH01	0.10 - 0.10	Light Brown	Sandy Clay Loam	Vegetation	None
26831294	MS-BH01	0.35 - 0.35	Light Brown	Sandy Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH01			
#	ISO17025 accredited.		F-WR3LTB-9ZSE	F-UV3LTB-MU5V			
M	mCERTS accredited.		0.10 - 0.10	0.35 - 0.35			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	26/08/2022	26/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09-00	09-05			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-23	220906-23			
	(F) Trigger breach confirmed	SDG Ref	26831286	26831294			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	15	22			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	4.76 #	4.86 #			
pH	1 pH Units	TM133	8.23 M	8.33 M			
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 @ M			
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 @ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	20.6	17.8			
Arsenic	<0.6 mg/kg	TM181	17.3 M	15.3 M			
Boron	<0.7 mg/kg	TM181	17.2 #	15.6 #			
Cadmium	<0.02 mg/kg	TM181	0.304 M	0.184 M			
Chromium	<0.9 mg/kg	TM181	20.6 M	17.8 M			
Copper	<1.4 mg/kg	TM181	19.1 M	15.4 M			
Iron	<1000 mg/kg	TM181	30600 #	28400 #			
Lead	<0.7 mg/kg	TM181	82.4 M	72.7 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	28.8 M	25.8 M			
Selenium	<1 mg/kg	TM181	1.12 #	1 #			
Zinc	<1.9 mg/kg	TM181	109 M	93.3 M			
Sulphate, Total	<48 mg/kg	TM221	370 M	303 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0123	0.0101			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.93	1.22			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0148 M	<0.004 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.94	6.65			
EPH (C5-C40)	<35 mg/kg	TM415	<35	96.9			
EPH Surrogate % recovery**	%	TM415	93.8	103			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH01			
#	ISO17025 accredited.		F-WR3LTB-9ZSE	F-UV3LTB-MU5V			
M	mCERTS accredited.		0.10 - 0.10	0.35 - 0.35			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	26/08/2022	26/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:00	09:05			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/08/2022	30/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-23	220906-23			
	(F) Trigger breach confirmed	SDG Ref	26831286	26831294			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	85.3	84.7			
Acenaphthene-d10 % recovery**	%	TM218	92.2	92.6			
Phenanthrene-d10 % recovery**	%	TM218	97.4	97.4			
Chrysene-d12 % recovery**	%	TM218	100	99.4			
Perylene-d12 % recovery**	%	TM218	96.2	98.4			
Naphthalene	<9 µg/kg	TM218	14.7	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	55.8	35.1			
			M	M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	67.7	37.2			
			M	M			
Pyrene	<15 µg/kg	TM218	58.6	32.5			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	31.6	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	39.1	24.2			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	47.7	28.1			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	16.7	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	26.7	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	25.7	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	28.3	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	413	157			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH01 F-UV3LTB-MU5V 0.35 - 0.35 Soil/Solid (S) 26/08/2022 09:05 30/08/2022 220906-23 26831294 ES4			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4* Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Semi Volatile Organic Compounds

#	Customer Sample Ref.	MS-BH01							
Results Legend # ISO17025 accredited. M mCERTS accredited. aq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-UV3LTB-MUSV 0.35 - 0.35 Soil/Solid (S) 26/08/2022 09:05 30/08/2022 220906-23 26831294 ES4							
			Component	LOD/Units	Method				
			2,6-Dinitrotoluene	<100 µg/kg	TM157	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100						
2,4-Dimethylphenol	<100 µg/kg	TM157	<100						
2,4-Dichlorophenol	<100 µg/kg	TM157	<100						
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100						
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100						
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100						
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100						
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100						
2-Chloronaphthalene	<100 µg/kg	TM157	<100						
2-Methylnaphthalene	<100 µg/kg	TM157	<100						
Acenaphthylene	<100 µg/kg	TM157	<100						
Acenaphthene	<100 µg/kg	TM157	<100						
Anthracene	<100 µg/kg	TM157	<100						
Benzo(a)anthracene	<100 µg/kg	TM157	<100						
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100						
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100						
Benzo(a)pyrene	<100 µg/kg	TM157	<100						
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100						
Chrysene	<100 µg/kg	TM157	<100						
Fluoranthene	<100 µg/kg	TM157	<100						
Fluorene	<100 µg/kg	TM157	<100						
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100						
Phenanthrene	<100 µg/kg	TM157	<100						
Pyrene	<100 µg/kg	TM157	<100						
Naphthalene	<100 µg/kg	TM157	<100						
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100						
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH01							
M mCERTS accredited.		F-IUV3LTB-MU5V							
aq Aqueous / settled sample.		0.35 - 0.35							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		26/08/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		Date Sampled							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		09:05							
(F) Trigger breach confirmed		30/08/2022							
1-4* Sample deviation (see appendix)		Date Received							
		220906-23							
		SDG Ref							
		26831294							
		Lab Sample No.(s)							
		ES4							
		AGS Reference							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	76.5	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	5160	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	6750	#					
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	18700	#					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	8350	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	2800	#					
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	12000	#					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	18700	#					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH01 F-WR3LTB-9ZSE 0.10 - 0.10 Soil/Solid (S) 26/08/2022 09:00 30/08/2022 220906-23 26831286 ES1	MS-BH01 F-UV3LTB-MU5V 0.35 - 0.35 Soil/Solid (S) 26/08/2022 09:05 30/08/2022 220906-23 26831294 ES4			
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	104 @	103 @			
Toluene-d8**	%	TM116	97.1 @	96.5 @			
4-Bromofluorobenzene**	%	TM116	90.3 @	90.8 @			
Dichlorodifluoromethane	<6 µg/kg	TM116		<120 @ #			
Chloromethane	<7 µg/kg	TM116		<140 @ #			
Vinyl Chloride	<6 µg/kg	TM116		<120 @ M			
Bromomethane	<10 µg/kg	TM116		<200 @ M			
Chloroethane	<10 µg/kg	TM116		<200 @ M			
Trichlorofluoromethane	<6 µg/kg	TM116		<120 @ M			
1,1-Dichloroethene	<10 µg/kg	TM116		<200 @ #			
Carbon Disulphide	<7 µg/kg	TM116		<140 @ M			
Dichloromethane	<10 µg/kg	TM116		<315 @ #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<200 @ M			
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<200 @ M			
1,1-Dichloroethane	<8 µg/kg	TM116		<160 @ M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<120 @ M			
2,2-Dichloropropane	<10 µg/kg	TM116		<200 @			
Bromochloromethane	<10 µg/kg	TM116		<200 @ M			
Chloroform	<8 µg/kg	TM116		<160 @ M			
1,1,1-Trichloroethane	<7 µg/kg	TM116		<140 @ M			
1,1-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Carbontetrachloride	<10 µg/kg	TM116		<200 @ M			
1,2-Dichloroethane	<5 µg/kg	TM116		<100 @ M			
Benzene	<9 µg/kg	TM116	<180 @ M	<180 @ M			
Trichloroethene	<9 µg/kg	TM116		<180 @ #			
1,2-Dichloropropane	<10 µg/kg	TM116		<200 @ M			
Dibromomethane	<9 µg/kg	TM116		<180 @ M			
Bromodichloromethane	<7 µg/kg	TM116		<140 @ M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Toluene	<7 µg/kg	TM116	<140 @ M	<140 @ M			
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<200 @ M			
1,3-Dichloropropane	<7 µg/kg	TM116		<140 @ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH01 F-WR3LTB-9ZSE 0.10 - 0.10 Soil/Solid (S) 26/08/2022 09:00 30/08/2022 220906-23 26831286 ES1	MS-BH01 F-UV3LTB-MU5V 0.35 - 0.35 Soil/Solid (S) 26/08/2022 09:05 30/08/2022 220906-23 26831294 ES4			
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116		<100	@ M		
Dibromochloromethane	<10 µg/kg	TM116		<200	@ M		
1,2-Dibromoethane	<10 µg/kg	TM116		<200	@ M		
Chlorobenzene	<5 µg/kg	TM116		<100	@ M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<200	@ M		
Ethylbenzene	<4 µg/kg	TM116	<80	<80	@ M		
p/m-Xylene	<10 µg/kg	TM116	<200	<200	@ #		
o-Xylene	<10 µg/kg	TM116	<200	<200	@ M		
Styrene	<10 µg/kg	TM116		<200	@ #		
Bromofom	<10 µg/kg	TM116		<200	@ M		
Isopropylbenzene	<5 µg/kg	TM116		<100	@ #		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<200	@ #		
1,2,3-Trichloropropane	<16 µg/kg	TM116		<320	@ M		
Bromobenzene	<10 µg/kg	TM116		<200	@ M		
Propylbenzene	<10 µg/kg	TM116		<200	@ M		
2-Chlorotoluene	<9 µg/kg	TM116		<180	@ M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<160	@ M		
4-Chlorotoluene	<10 µg/kg	TM116		<200	@ M		
tert-Butylbenzene	<14 µg/kg	TM116		<280	@ #		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<180	@ #		
sec-Butylbenzene	<10 µg/kg	TM116		<200	@		
4-Isopropyltoluene	<10 µg/kg	TM116		<200	@		
1,3-Dichlorobenzene	<8 µg/kg	TM116		<160	@ M		
1,4-Dichlorobenzene	<5 µg/kg	TM116		<100	@ M		
n-Butylbenzene	<11 µg/kg	TM116		<220	@		
1,2-Dichlorobenzene	<10 µg/kg	TM116		<200	@ M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<280	@ M		
Tert-amyl methyl ether	<10 µg/kg	TM116		<200	@ #		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<400	@		
Hexachlorobutadiene	<20 µg/kg	TM116		<400	@		
Naphthalene	<13 µg/kg	TM116		<260	@ M		
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<400	@ #		
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<400			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
14/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	MS-BH01ES1
Depth (m)	0.10 - 0.10
Sample Type	SOLID
Date Sampled	26/08/2022 00:00:00
Date Received	30/08/2022 05:00:00
SDG	220906-23
Original Sample	26831286
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-23
Client Ref.: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Test Completion Dates

Lab Sample No(s)	26831286	26831294
Customer Sample Ref.	MS-BH01	MS-BH01
AGS Ref.	ES1	ES4
Depth	0.10 - 0.10	0.35 - 0.35
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	12-Sep-2022	12-Sep-2022
Anions by Kone (soil)	13-Sep-2022	12-Sep-2022
Asbestos ID in Solid Samples	14-Sep-2022	
Chromium III	12-Sep-2022	12-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022	15-Sep-2022
Easily Liberated Sulphide	13-Sep-2022	13-Sep-2022
Elemental Sulphur	15-Sep-2022	15-Sep-2022
EPH	12-Sep-2022	12-Sep-2022
EPH by GCxGC-FID	12-Sep-2022	12-Sep-2022
EPH CWG GC (S)		08-Sep-2022
GRO by GC-FID (S)	12-Sep-2022	12-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022	08-Sep-2022
Metals in solid samples by OES	13-Sep-2022	13-Sep-2022
NO3, NO2 and TON by KONE (s)	13-Sep-2022	12-Sep-2022
PAH by GCMS	09-Sep-2022	09-Sep-2022
pH	14-Sep-2022	09-Sep-2022
Phenols by HPLC (S)	15-Sep-2022	15-Sep-2022
Sample description	07-Sep-2022	07-Sep-2022
Semi Volatile Organic Compounds		09-Sep-2022
Total Organic Carbon	14-Sep-2022	14-Sep-2022
Total Sulphate	12-Sep-2022	12-Sep-2022
TPH CWG GC (S)		12-Sep-2022
VOC MS (S)	13-Sep-2022	13-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220906-23
Client Ref: F212561

Report Number: 661267
Location: Keadby 3

Superseded Report: 661206

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 20 September 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220906-24
Your Reference: F212561
Location: Keadby 3
Report No: 661650
Order Number: 386/121917/CP

This report has been revised and directly supersedes 661278 in its entirety.

We received 4 samples on Friday August 26, 2022 and 2 of these samples were scheduled for analysis which was completed on Tuesday September 20, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

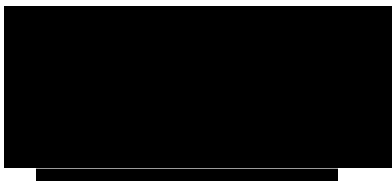
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26831499	MS-BH07	ES1	0.20 - 0.30	23/08/2022
26831515	MS-BH07	ES4	0.50 - 0.60	23/08/2022
26831522	MS-BH07	ES6	1.00 - 1.10	23/08/2022
26831506	MS-BH07	ES12	1.90 - 2.00	23/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26831499	MS-BH07	ES1	0.20 - 0.30	1.90 - 2.00	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
					1kg TUB with Handle (ALE260)	S	
Acid herbicides*	All	NDPs: 0 Tests: 1	X				
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X				
Chromium III	All	NDPs: 0 Tests: 2	X		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 1			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X		



CERTIFICATE OF ANALYSIS

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SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26831499	26831506			
	Customer Sample Reference	MS-BH07			MS-BH07	
	AGS Reference	ES1			ES12	
	Depth (m)	0.20 - 0.30			1.90 - 2.00	
	Container	1kg TUB with Handle (ALE260)			250g Amber Jar (ALE210)	
		250g Amber Jar (ALE215)			60g VOC (ALE215)	
	Sample Type	S	S	S	S	S
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1		X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X	
pH	All	NDPs: 0 Tests: 2	X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X	
Sample description	All	NDPs: 0 Tests: 2	X		X	
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1			X	
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X	
Total Sulphate	All	NDPs: 0 Tests: 2	X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

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SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26831499	MS-BH07	0.20 - 0.30	Dark Brown	Sandy Clay Loam	Stones	Vegetation
26831506	MS-BH07	1.90 - 2.00	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Results Legend		Customer Sample Ref.		MS-BH07	MS-BH07			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		F-P8GHTB-E7YL 0.20 - 0.30 Soil/Solid (S) 23/08/2022 10:10 26/08/2022 220906-24 26831499 ES1	F-WVHHTB-300N 1.90 - 2.00 Soil/Solid (S) 23/08/2022 10:45 26/08/2022 220906-24 26831506 ES12			
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	20	10				
2,4,5-T*	<0.01 mg/kg	SUB	<0.01					
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01					
2,4-D*	<0.01 mg/kg	SUB	<0.01					
2,4-DB*	<0.01 mg/kg	SUB	<0.01					
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01					
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01					
Acifluorfen*	<0.01 mg/kg	SUB	<0.01					
Bentazone*	<0.01 mg/kg	SUB	<0.01					
Bromoxynil*	<0.01 mg/kg	SUB	<0.01					
Dicamba*	<0.01 mg/kg	SUB	<0.01					
Diclofop*	<0.01 mg/kg	SUB	<0.01					
Dinoseb*	<0.01 mg/kg	SUB	<0.01					
DNOC*	<0.01 mg/kg	SUB	<0.01					
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01					
loxylnil*	<0.01 mg/kg	SUB	<0.01					
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01					
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01					
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01					
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01					
Triclopyr*	<0.01 mg/kg	SUB	<0.01					
Triclosan*	<0.01 mg/kg	SUB	<0.01					
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15				
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035				
Soil Organic Matter (SOM)	<0.35 %	TM132	4.95	0.726				
pH	1 pH Units	TM133	8.39	8.6				
Sulphur, Elemental	<10 mg/kg	TM136	11	<10				
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6				
Cyanide, Total	<1 mg/kg	TM153	<1	<1				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Results Legend		Customer Sample Ref.	MS-BH07	MS-BH07				
#	ISO17025 accredited.		F-P8GHTB-E7YL	F-WVHHTB-300N				
M	mCERTS accredited.		0.20 - 0.30	1.90 - 2.00				
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)				
dis.filt	Dissolved / filtered sample.		23/08/2022	23/08/2022				
tot.unfilt	Total / unfiltered sample.		10:10	10:45				
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	26/08/2022	26/08/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	220906-24	220906-24				
(F)	Trigger breach confirmed	Date Sampled	26831499	26831506				
1-4#@	Sample deviation (see appendix)	Sample Time	ES1	ES12				
		Date Received						
		SDG Ref						
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
Cyanide, Free	<1 mg/kg	TM153	<1	<1				
			@ M	@ M				
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15				
			@ M	@ M				
Chromium, Trivalent	<0.9 mg/kg	TM181	17	4.51				
Arsenic	<0.6 mg/kg	TM181	15.4	1.31				
			M	M				
Boron	<0.7 mg/kg	TM181	13.6	0.933				
			#	#				
Cadmium	<0.02 mg/kg	TM181	0.265	0.0407				
			M	M				
Chromium	<0.9 mg/kg	TM181	17	4.51				
			M	M				
Copper	<1.4 mg/kg	TM181	20.2	4.77				
			M	M				
Iron	<1000 mg/kg	TM181	27600	3670				
			#	#				
Lead	<0.7 mg/kg	TM181	74.5	5.15				
			M	M				
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1				
			M	M				
Nickel	<0.2 mg/kg	TM181	26.5	5.43				
			M	M				
Selenium	<1 mg/kg	TM181	1.04	<1				
			#	#				
Zinc	<1.9 mg/kg	TM181	111	11.1				
			M	M				
Sulphate, Total	<48 mg/kg	TM221	427	<48				
			M	M				
Total Sulphur (ASB)	<0.0016 %	TM221	0.0142	<0.0016				
Nitrite as NO ₂ , 2:1 water soluble	<0.1 mg/kg	TM243	1.86	<0.1				
Water Soluble Sulphate as SO ₄ 2:1 Extract	<0.004 g/l	TM243	0.077	0.0085				
			M	M				
Nitrate as NO ₃ , 2:1 water soluble	<1 mg/kg	TM243	6.21	<1				
EPH (C5-C40)	<35 mg/kg	TM415	51.5	<35				
EPH Surrogate % recovery**	%	TM415	99.4	103				
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	51.5	<35				
			@ M	@ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH07				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-P8GHTB-E7YL 0.20 - 0.30 Soil/Solid (S) 23/08/2022 10:10 26/08/2022 220906-24 26831499 ES1				
Component	LOD/Units	Method					
Dichlorvos	<50 µg/kg	TM073	<50				
Mevinphos	<50 µg/kg	TM073	<50				
Phorate	<50 µg/kg	TM073	<50				
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Diazinon	<50 µg/kg	TM073	<50				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50				
Disulfoton	<50 µg/kg	TM073	<50				
Heptachlor	<50 µg/kg	TM073	<50				
Aldrin	<50 µg/kg	TM073	<50				
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Methyl parathion	<50 µg/kg	TM073	<50				
Malathion	<50 µg/kg	TM073	<50				
Fenitrothion	<50 µg/kg	TM073	<50				
Heptachlor epoxide	<50 µg/kg	TM073	<50				
Parathion	<50 µg/kg	TM073	<50				
Endosulphan I	<50 µg/kg	TM073	<50				
p,p-DDE	<50 µg/kg	TM073	<50				
Dieldrin	<50 µg/kg	TM073	<50				
Endrin	<50 µg/kg	TM073	<50				
p,p-TDE (DDD)	<50 µg/kg	TM073	<50				
Ethion	<50 µg/kg	TM073	<50				
Endosulphan II	<50 µg/kg	TM073	<50				
p,p-DDT	<50 µg/kg	TM073	<150				
p,p-Methoxychlor	<50 µg/kg	TM073	<50				
Endosulphan sulphate	<50 µg/kg	TM073	<50				
Azinphos-methyl	<50 µg/kg	TM073	<50				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH07	MS-BH07			
#	ISO17025 accredited.		F-P8GHTB-E7YL	F-WVHHTB-300N			
M	mCERTS accredited.		0.20 - 0.30	1.90 - 2.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	23/08/2022	23/08/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:10	10:45			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	26/08/2022	26/08/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220906-24	220906-24			
(F)	Trigger breach confirmed	SDG Ref	26831499	26831506			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES12			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	89.8	93.6			
Acenaphthene-d10 % recovery**	%	TM218	93.5	94.5			
Phenanthrene-d10 % recovery**	%	TM218	99	96.1			
Chrysene-d12 % recovery**	%	TM218	92.7	87.8			
Perylene-d12 % recovery**	%	TM218	88.3	90.4			
Naphthalene	<9 µg/kg	TM218	15.9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	74.6	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	136	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	117	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	51.3	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	56.8	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	81.3	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	24	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	47.4	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	37.3	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	37.4	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	679	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH07 F-WVHHTB-300N 1.90 - 2.00 Soil/Solid (S) 23/08/2022 10:45 26/08/2022 220906-24 26831506 ES12			
# ISO17025 accredited.		Depth (m)				
M mCERTS accredited.		Sample Type				
aq Aqueous / settled sample.		Date Sampled				
diss.filt Dissolved / filtered sample.		Sample Time				
tot.unfilt Total / unfiltered sample.		Date Received				
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)				
(F) Trigger breach confirmed		AGS Reference				
1-4* Sample deviation (see appendix)						
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Semi Volatile Organic Compounds

#	Results Legend	Customer Sample Ref.	MS-BH07 F-WVHHTB-300N 1.90 - 2.00 Soil/Solid (S) 23/08/2022 10:45 26/08/2022 220906-24 26831506 ES12	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
Component	LOD/Units	Method									
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100								
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100								
2,4-Dimethylphenol	<100 µg/kg	TM157	<100								
2,4-Dichlorophenol	<100 µg/kg	TM157	<100								
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100								
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100								
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100								
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100								
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100								
2-Chloronaphthalene	<100 µg/kg	TM157	<100								
2-Methylnaphthalene	<100 µg/kg	TM157	<100								
Acenaphthylene	<100 µg/kg	TM157	<100								
Acenaphthene	<100 µg/kg	TM157	<100								
Anthracene	<100 µg/kg	TM157	<100								
Benzo(a)anthracene	<100 µg/kg	TM157	<100								
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100								
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100								
Benzo(a)pyrene	<100 µg/kg	TM157	<100								
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100								
Chrysene	<100 µg/kg	TM157	<100								
Fluoranthene	<100 µg/kg	TM157	<100								
Fluorene	<100 µg/kg	TM157	<100								
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100								
Phenanthrene	<100 µg/kg	TM157	<100								
Pyrene	<100 µg/kg	TM157	<100								
Naphthalene	<100 µg/kg	TM157	<100								
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100								
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100								



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH07							
M mCERTS accredited.		F-WVHHTB-300N							
AQ Aqueous / settled sample.		1.90 - 2.00							
DISS.DISS Dissolved / filtered sample.		Soil/Solid (S)							
TOT.UNFIT Total / unfiltered sample.		23/08/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		10:45							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		26/08/2022							
(F) Trigger breach confirmed		220906-24							
1-4* @ Sample deviation (see appendix)		26831506							
		ES12							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	99.3	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1610	@ #					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	16500	@ #					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1870	@					
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	20000	@					
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	50900	@					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1000	@ #					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	17500	@ #					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	11700	@					
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1720	@					
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	30900	@					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	50900	@					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH07 F-P8GHTB-E7YL 0.20 - 0.30 Soil/Solid (S) 23/08/2022 10:10 26/08/2022 220906-24 26831499 ES1	MS-BH07 F-WVHHTB-300N 1.90 - 2.00 Soil/Solid (S) 23/08/2022 10:45 26/08/2022 220906-24 26831506 ES12			
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	120 @	111 @			
Toluene-d8**	%	TM116	97.6 @	97.4 @			
4-Bromofluorobenzene**	%	TM116	98.1 @	91.9 @			
Dichlorodifluoromethane	<6 µg/kg	TM116		<6 @ #			
Chloromethane	<7 µg/kg	TM116		<7 @ #			
Vinyl Chloride	<6 µg/kg	TM116		<6 @ M			
Bromomethane	<10 µg/kg	TM116		<10 @ M			
Chloroethane	<10 µg/kg	TM116		<10 @ M			
Trichlorofluoromethane	<6 µg/kg	TM116		<6 @ M			
1,1-Dichloroethene	<10 µg/kg	TM116		<10 @ #			
Carbon Disulphide	<7 µg/kg	TM116		<7 @ M			
Dichloromethane	<10 µg/kg	TM116		<15 @ #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<10 @ M			
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<10 @ M			
1,1-Dichloroethane	<8 µg/kg	TM116		<8 @ M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<6 @ M			
2,2-Dichloropropane	<10 µg/kg	TM116		<10 @			
Bromochloromethane	<10 µg/kg	TM116		<10 @ M			
Chloroform	<8 µg/kg	TM116		<8 @ M			
1,1,1-Trichloroethane	<7 µg/kg	TM116		<7 @ M			
1,1-Dichloropropene	<10 µg/kg	TM116		<10 @ M			
Carbontetrachloride	<10 µg/kg	TM116		<10 @ M			
1,2-Dichloroethane	<5 µg/kg	TM116		<5 @ M			
Benzene	<9 µg/kg	TM116	<180 @ M	<9 @ M			
Trichloroethene	<9 µg/kg	TM116		<9 @ #			
1,2-Dichloropropane	<10 µg/kg	TM116		<10 @ M			
Dibromomethane	<9 µg/kg	TM116		<9 @ M			
Bromodichloromethane	<7 µg/kg	TM116		<7 @ M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<10 @ M			
Toluene	<7 µg/kg	TM116	<140 @ M	<7 @ M			
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<10 @			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<10 @ M			
1,3-Dichloropropane	<7 µg/kg	TM116		<7 @ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH07 F-P8GHTB-E7YL 0.20 - 0.30 Soil/Solid (S) 23/08/2022 10:10 26/08/2022 220906-24 26831499 ES1	MS-BH07 F-WVHHTB-300N 1.90 - 2.00 Soil/Solid (S) 23/08/2022 10:45 26/08/2022 220906-24 26831506 ES12			
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116		<5 @ M			
Dibromochloromethane	<10 µg/kg	TM116		<10 @ M			
1,2-Dibromoethane	<10 µg/kg	TM116		<10 @ M			
Chlorobenzene	<5 µg/kg	TM116		<5 @ M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<10 @ M			
Ethylbenzene	<4 µg/kg	TM116	<80 @ M	<4 @ M			
p/m-Xylene	<10 µg/kg	TM116	<200 @ #	<10 @ #			
o-Xylene	<10 µg/kg	TM116	<200 @ M	<10 @ M			
Styrene	<10 µg/kg	TM116		<10 @ #			
Bromoform	<10 µg/kg	TM116		<10 @ M			
Isopropylbenzene	<5 µg/kg	TM116		<5 @ #			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<10 @ #			
1,2,3-Trichloropropane	<16 µg/kg	TM116		<16 @ M			
Bromobenzene	<10 µg/kg	TM116		<10 @ M			
Propylbenzene	<10 µg/kg	TM116		<10 @ M			
2-Chlorotoluene	<9 µg/kg	TM116		<9 @ M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<8 @ M			
4-Chlorotoluene	<10 µg/kg	TM116		<10 @ M			
tert-Butylbenzene	<14 µg/kg	TM116		<14 @ #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<9 @ #			
sec-Butylbenzene	<10 µg/kg	TM116		<10 @			
4-Isopropyltoluene	<10 µg/kg	TM116		<10 @			
1,3-Dichlorobenzene	<8 µg/kg	TM116		<8 @ M			
1,4-Dichlorobenzene	<5 µg/kg	TM116		<5 @ M			
n-Butylbenzene	<11 µg/kg	TM116		<11 @			
1,2-Dichlorobenzene	<10 µg/kg	TM116		<10 @ M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<14 @ M			
Tert-amyl methyl ether	<10 µg/kg	TM116		<10 @ #			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<20 @			
Hexachlorobutadiene	<20 µg/kg	TM116		<20 @			
Naphthalene	<13 µg/kg	TM116		<13 @ M			
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<20 @ #			
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<20			



CERTIFICATE OF ANALYSIS

SDG: 220906-24

Report Number: 661650

Superseded Report: 661278

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend	Customer Sample Ref.		MS-BH07	MS-BH07			
	Depth (m)	Sample Type	F-P8GHTB-E7YL	F-WVHHTB-300N			
# ISO17025 accredited.	0.20 - 0.30		0.20 - 0.30	1.90 - 2.00			
M mCERTS accredited.	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)			
sq. Aqueous / settled sample.	23/08/2022		23/08/2022	23/08/2022			
dis.filt. Dissolved / filtered sample.	Date Sampled		10:10	10:45			
tot.unfilt. Total / unfiltered sample.	Sample Time		26/08/2022	26/08/2022			
* Subcontracted - refer to subcontractor report for accreditation status.	Date Received		220906-24	220906-24			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref		26831499	26831506			
(F) Trigger breach confirmed	Lab Sample No.(s)		ES1	ES12			
1-4*%@ Sample deviation (see appendix)	AGS Reference						
Component	LOD/Units	Method					
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.02	@		
Sum of BTEX	<40 µg/kg	TM116	<800	<40	@		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH07ES1 0.20 - 0.30 SOLID 23/08/2022 00:00:00 26/08/2022 05:00:00 220906-24 26831499 TM048	14/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220906-24
Client Ref.: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Test Completion Dates

Lab Sample No(s)	26831499	26831506
Customer Sample Ref.	MS-BH07	MS-BH07
AGS Ref.	ES1	ES12
Depth	0.20 - 0.30	1.90 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)

	26831499	26831506
Acid herbicides*	20-Sep-2022	
Ammonium Soil by Titration	08-Sep-2022	08-Sep-2022
Anions by Kone (soil)	12-Sep-2022	12-Sep-2022
Asbestos ID in Solid Samples	14-Sep-2022	
Chromium III	11-Sep-2022	11-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2022	12-Sep-2022
Easily Liberated Sulphide	12-Sep-2022	14-Sep-2022
Elemental Sulphur	15-Sep-2022	15-Sep-2022
EPH	12-Sep-2022	12-Sep-2022
EPH by GCxGC-FID	08-Sep-2022	08-Sep-2022
EPH CWG GC (S)		09-Sep-2022
GRO by GC-FID (S)	12-Sep-2022	12-Sep-2022
Hexavalent Chromium (s)	08-Sep-2022	08-Sep-2022
Metals in solid samples by OES	12-Sep-2022	12-Sep-2022
NO3, NO2 and TON by KONE (s)	12-Sep-2022	12-Sep-2022
OC OP Pesticides and Triazine Herb	09-Sep-2022	
PAH by GCMS	08-Sep-2022	08-Sep-2022
pH	14-Sep-2022	09-Sep-2022
Phenols by HPLC (S)	14-Sep-2022	14-Sep-2022
Sample description	06-Sep-2022	06-Sep-2022
Semi Volatile Organic Compounds		09-Sep-2022
Total Organic Carbon	13-Sep-2022	13-Sep-2022
Total Sulphate	12-Sep-2022	12-Sep-2022
TPH CWG GC (S)		12-Sep-2022
VOC MS (S)	13-Sep-2022	12-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2289821	Issue Date	: 20-Sep-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220906-24	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 09-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 09-Sep-2022 - 20-Sep-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný

Position

[REDACTED] Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Parameter	Method	LOR	Unit	Client sample ID		Laboratory sample ID		Client sampling date / time	
				Result	MU	Result	MU	Result	MU
Sub-Matrix: SOIL				26833322	----	MS-BH07	----	PR2289821001	----
								06-Sep-2022 10:34	----
Physical Parameters									
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	79.2	± 6.0%	----	----	----	----
Pesticides									
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

SDG: 220906-24
Client Ref: F212561

Report Number: 661650
Location: Keadby 3

Superseded Report: 661278

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220913-82
Your Reference:	F212561
Location:	Keadby 3
Report No:	664178
Order Number:	386/121917/CP

We received 3 samples on Friday September 09, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday September 27, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

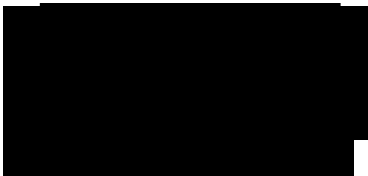
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26866371	MS-BH05	ES1	0.10 - 0.10	06/09/2022
26866382	MS-BH05	ES4	0.50 - 0.50	06/09/2022
26866394	MS-BH05	ES7	1.00 - 1.00	06/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> Test</div> <div style="display: flex; align-items: center;"> No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26966371	MS-BH05	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
		26966382	MS-BH05	ES4	0.50 - 0.50	250g Amber Jar (ALE210)	S
		26966394	MS-BH05	ES7	1.00 - 1.00	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Low	All	NDPs: 0 Tests: 2					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Anions by Kone (w)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
CEN Readings	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Results Legend			Lab Sample No(s)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type		
			26866371	26866382	26866394	MS-BH05	MS-BH05	MS-BH05	ES1	ES4	ES7	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	S	S
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>																				
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		X				X												X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3		X				X												X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2						X											X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2						X											X	
Mercury Dissolved	All	NDPs: 0 Tests: 2						X											X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 3		X				X											X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2						X											X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3		X				X											X	
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1						X												
PAH by GCMS	All	NDPs: 0 Tests: 3		X				X											X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2						X											X	
pH	All	NDPs: 0 Tests: 3		X				X											X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 2						X											X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3		X				X											X	
Sample description	All	NDPs: 0 Tests: 3		X				X											X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	26866371	26866382	26866394
Customer Sample Reference	MS-BH05	MS-BH05	MS-BH05
AGS Reference	ES1	ES4	ES7
Depth (m)	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00
Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)
Sample Type	S	S	S

Parameter	All	NDPs: 0 Tests: 1	26866371	26866382	26866394
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1	X		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2		X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1	X		
VOC MS (S)	All	NDPs: 0 Tests: 3		X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
------------------	----------	-------------	-----------------	---------------	-------------	---------------	------------	--------------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26866371	MS-BH05	0.10 - 0.10	Light Brown	Sandy Loam	Stones	Vegetation
26866382	MS-BH05	0.50 - 0.50	Light Brown	Sand	None	None
26866394	MS-BH05	1.00 - 1.00	Light Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH05	MS-BH05	MS-BH05		
#	ISO17025 accredited.		F-3WY5UB-Y8GG	F-4125UB-KH9I	F-W3Z5UB-8JAU		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	06/09/2022	06/09/2022	06/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:20	14:30	14:35		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	09/09/2022	09/09/2022	09/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220913-82	220913-82	220913-82		
(F)	Trigger breach confirmed	SDG Ref	26866371	26866382	26866394		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	14	11		
2,4,5-T*	<0.01 mg/kg	SUB		<0.01			
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB		<0.01			
2,4-D*	<0.01 mg/kg	SUB		<0.01			
2,4-DB*	<0.01 mg/kg	SUB		<0.01			
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB		<0.01			
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB		<0.01			
Acifluorfen*	<0.01 mg/kg	SUB		<0.01			
Bentazone*	<0.01 mg/kg	SUB		<0.01			
Bromoxynil*	<0.01 mg/kg	SUB		<0.01			
Dicamba*	<0.01 mg/kg	SUB		<0.01			
Diclofop*	<0.01 mg/kg	SUB		<0.01			
Dinoseb*	<0.01 mg/kg	SUB		<0.01			
DNOC*	<0.01 mg/kg	SUB		<0.01			
Fluroxypyr*	<0.01 mg/kg	SUB		<0.01			
loxylnil*	<0.01 mg/kg	SUB		<0.01			
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB		<0.01			
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB		<0.01			
Mecoprop (MCP)*	<0.01 mg/kg	SUB		<0.01			
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB		<0.01			
Triclopyr*	<0.01 mg/kg	SUB		<0.01			
Triclosan*	<0.01 mg/kg	SUB		<0.01			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15		
			M	M	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12		
			M	M	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
			@ M	@ M	@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
			@ M	@ M	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015		
			@ M	@ M	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035		
			@ M	@ M	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	4.03	0.402	0.809		
			#	#	#		
pH	1 pH Units	TM133	8.22	8.44	8.07		
			M	M	M		
Sulphur, Elemental	<10 mg/kg	TM136	10.4	<10	<10		
			M	M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6		
			M	M	M		
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1		
			M	M	@ M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH05	MS-BH05	MS-BH05		
#	ISO17025 accredited.		F-3WY5UB-Y8GG	F-41Z5UB-KH9I	F-W3Z5UB-8JAU		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	06/09/2022	06/09/2022	06/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:20	14:30	14:35		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	09/09/2022	09/09/2022	09/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220913-82	220913-82	220913-82		
	(F) Trigger breach confirmed	SDG Ref	26866371	26866382	26866394		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	85.5	89.3	87		
Acenaphthene-d10 % recovery**	%	TM218	90	90.2	89.5		
Phenanthrene-d10 % recovery**	%	TM218	98.1	92.9	95		
Chrysene-d12 % recovery**	%	TM218	89.8	90.2	86.4		
Perylene-d12 % recovery**	%	TM218	87	86.9	82.5		
Naphthalene	<9 µg/kg	TM218	22.5	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	76.6	<15	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	70.6	<17	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	61.7	<15	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	31.7	<14	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	44.7	<10	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	54.5	<15	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	16.7	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	25.9	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	30.5	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	435	<118	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH05			
#	ISO17025 accredited.		F-3WY5UB-Y8GG			
M	mCERTS accredited.		0.10 - 0.10			
aq	Aqueous / settled sample.		Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.	Depth (m)	06/09/2022			
tot.unfilt	Total / unfiltered sample.	Sample Type	14:20			
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	09/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	220913-82			
(F)	Trigger breach confirmed	Date Received	26866371			
1-4*\$@	Sample deviation (see appendix)	SDG Ref	ES1			
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH05							
M mCERTS accredited.		F-3WY5UB-Y8GG							
aq Aqueous / settled sample.		0.10 - 0.10							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		06/09/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		14:20							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		09/09/2022							
(F) Trigger breach confirmed		220913-82							
1-4* Sample deviation (see appendix)		26866371							
		ES1							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	87.3						
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	9080	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	11000						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	20300						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1310	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	6080	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1960						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	9340						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	20300						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50						
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH05	MS-BH05	MS-BH05		
#	ISO17025 accredited.		F-3WY5UB-Y8GG	F-41Z5UB-KH9I	F-W3Z5UB-8JAU		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	06/09/2022	06/09/2022	06/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:20	14:30	14:35		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	09/09/2022	09/09/2022	09/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220913-82	220913-82	220913-82		
(F)	Trigger breach confirmed	SDG Ref	26866371	26866382	26866394		
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	118 @	103	103		
Toluene-d8**	%	TM116	98.2 @	96.4	95.2		
4-Bromofluorobenzene**	%	TM116	90.5 @	89.1	87.1		
Dichlorodifluoromethane	<6 µg/kg	TM116	<60 @ #				
Chloromethane	<7 µg/kg	TM116	<70 @ #				
Vinyl Chloride	<6 µg/kg	TM116	<60 @ M				
Bromomethane	<10 µg/kg	TM116	<100 @ M				
Chloroethane	<10 µg/kg	TM116	<100 @ M				
Trichlorofluoromethane	<6 µg/kg	TM116	<60 @ M				
1,1-Dichloroethene	<10 µg/kg	TM116	<100 @ #				
Carbon Disulphide	<7 µg/kg	TM116	<70 @ M				
Dichloromethane	<10 µg/kg	TM116	<135 @ #				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100 @ M	<10 M	<10 M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100 @ M				
1,1-Dichloroethane	<8 µg/kg	TM116	<80 @ M				
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60 @ M				
2,2-Dichloropropane	<10 µg/kg	TM116	<100 @				
Bromochloromethane	<10 µg/kg	TM116	<100 @ M				
Chloroform	<8 µg/kg	TM116	<80 @ M				
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70 @ M				
1,1-Dichloropropene	<10 µg/kg	TM116	<100 @ M				
Carbontetrachloride	<10 µg/kg	TM116	<100 @ M				
1,2-Dichloroethane	<5 µg/kg	TM116	<50 @ M				
Benzene	<9 µg/kg	TM116	<90 @ M	<9 M	<9 M		
Trichloroethene	<9 µg/kg	TM116	<90 @ #				
1,2-Dichloropropane	<10 µg/kg	TM116	<100 @ M				
Dibromomethane	<9 µg/kg	TM116	<90 @ M				
Bromodichloromethane	<7 µg/kg	TM116	<70 @ M				
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100 @ M				
Toluene	<7 µg/kg	TM116	<70 @ M	<7 M	<7 M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<100 @				
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100 @ M				
1,3-Dichloropropane	<7 µg/kg	TM116	<70 @ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH05 F-3WY5UB-Y8GG 0.10 - 0.10 Soil/Solid (S) 06/09/2022 14:20 09/09/2022 220913-82 26866371 ES1	MS-BH05 F-41Z5UB-KH9I 0.50 - 0.50 Soil/Solid (S) 06/09/2022 14:30 09/09/2022 220913-82 26866382 ES4	MS-BH05 F-W3Z5UB-8JAU 1.00 - 1.00 Soil/Solid (S) 06/09/2022 14:35 09/09/2022 220913-82 26866394 ES7		
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116	<50 @ M				
Dibromochloromethane	<10 µg/kg	TM116	<100 @ M				
1,2-Dibromoethane	<10 µg/kg	TM116	<100 @ M				
Chlorobenzene	<5 µg/kg	TM116	<50 @ M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<100 @ M				
Ethylbenzene	<4 µg/kg	TM116	<4 @ M	<4 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<100 @ #	<10 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<100 @ M	<10 M	<10 M		
Styrene	<10 µg/kg	TM116	<100 @ #				
Bromofom	<10 µg/kg	TM116	<100 @ M				
Isopropylbenzene	<5 µg/kg	TM116	<50 @ #				
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<100 @ #				
1,2,3-Trichloropropane	<16 µg/kg	TM116	<160 @ M				
Bromobenzene	<10 µg/kg	TM116	<100 @ M				
Propylbenzene	<10 µg/kg	TM116	<100 @ M				
2-Chlorotoluene	<9 µg/kg	TM116	<90 @ M				
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<80 @ M				
4-Chlorotoluene	<10 µg/kg	TM116	<100 @ M				
tert-Butylbenzene	<14 µg/kg	TM116	<140 @ #				
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<90 @ #				
sec-Butylbenzene	<10 µg/kg	TM116	<100 @				
4-Isopropyltoluene	<10 µg/kg	TM116	<100 @				
1,3-Dichlorobenzene	<8 µg/kg	TM116	<80 @ M				
1,4-Dichlorobenzene	<5 µg/kg	TM116	<50 @ M				
n-Butylbenzene	<11 µg/kg	TM116	<110 @				
1,2-Dichlorobenzene	<10 µg/kg	TM116	<100 @ M				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<140 @ M				
Tert-amyl methyl ether	<10 µg/kg	TM116	<100 @ #				
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<200 @				
Hexachlorobutadiene	<20 µg/kg	TM116	<200 @				
Naphthalene	<13 µg/kg	TM116	<130 @ M				
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<200 @ #				
1,3,5-Trichlorobenzene	<20 µg/kg	TM116	<200				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH05ES1 0.10 - 0.10 SOLID 06/09/2022 00:00:00 09/09/2022 05:00:00 220913-82 26866371 TM048	23/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH05ES4 0.50 - 0.50 SOLID 06/09/2022 00:00:00 09/09/2022 05:00:00 220913-82 26866382 TM048	23/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	18.2
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	84.6
Particle Size <4mm	>95%		

Case	
SDG	220913-82
Lab Sample Number(s)	26866382
Sampled Date	06-Sep-2022
Customer Sample Ref.	MS-BH05 ES4
Depth (m)	0.50 - 0.50

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8	<0.001	-	-
Sulphate (soluble)	<2	<2	<4	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	11.9	<3	23.8	<6
Ammoniacal Nitrogen as N	0.053	<0.01	0.106	<0.02
Arsenic	<0.0005	<0.0005	<0.001	<0.001
Nitrate as NO3	1.14	<0.3	2.28	<0.6
Total Ammonium Low as NH4	0.681	<0.01	1.36	<0.02
Boron	0.0316	<0.01	0.0632	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	<0.001	<0.001	<0.002	<0.002
Copper	0.00183	<0.0003	0.00366	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.000634	<0.0004	0.00127	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.00104	<0.001	0.00208	<0.002
Calcium (Dis.Filt) mg/l	30.4	<0.2	60.8	<0.4
Iron (Dis.Filt) mg/l	0.391	<0.019	0.782	<0.038
Hardness dissolved	80.1	<0.65	160	<1.3

PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Sep-2022
pH (pH Units)	8.15
Conductivity (µS/cm)	125.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

11/10/2022 09:38:33

09:38:18 11/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	18.2
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	84.6
Particle Size <4mm	>95%		

Case	
SDG	220913-82
Lab Sample Number(s)	26866382
Sampled Date	06-Sep-2022
Customer Sample Ref.	MS-BH05 ES4
Depth (m)	0.50 - 0.50

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Sep-2022
pH (pH Units)	8.15
Conductivity (µS/cm)	125.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.191	Natural Moisture Content (%)	9.2
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	91.6
Particle Size <4mm	>95%		

Case	
SDG	220913-82
Lab Sample Number(s)	26866394
Sampled Date	06-Sep-2022
Customer Sample Ref.	MS-BH05 ES7
Depth (m)	1.00 - 1.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	7.5	<0.001	-	-
Sulphate (soluble)	<2	<2	<4	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	14.4	<6	28.8	<12
Ammoniacal Nitrogen as N	0.028	<0.01	0.056	<0.02
Arsenic	0.000794	<0.0005	0.00159	<0.001
Nitrate as NO3	0.726	<0.3	1.45	<0.6
Total Ammonium Low as NH4	0.036	<0.01	0.072	<0.02
Boron	0.0108	<0.01	0.0216	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.00106	<0.001	0.00212	<0.002
Copper	0.00277	<0.0003	0.00554	<0.0006
Lead	0.000697	<0.0002	0.00139	<0.0004
Nickel	0.0016	<0.0004	0.0032	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.00295	<0.001	0.0059	<0.002
Calcium (Dis.Filt) mg/l	10.2	<0.2	20.4	<0.4
Iron (Dis.Filt) mg/l	0.571	<0.019	1.14	<0.038
Hardness dissolved	27.4	<0.65	54.8	<1.3

PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	0.0000124	<0.000005	0.0000248	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	0.0000101	<0.000005	0.0000202	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	0.00000928	<0.000005	0.0000186	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Sep-2022
pH (pH Units)	7.87
Conductivity (µS/cm)	63.20
Temperature (°C)	18.90
Volume Leachant (Litres)	0.334
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.191	Natural Moisture Content (%)	9.2
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	91.6
Particle Size <4mm	>95%		

Case	
SDG	220913-82
Lab Sample Number(s)	26866394
Sampled Date	06-Sep-2022
Customer Sample Ref.	MS-BH05 ES7
Depth (m)	1.00 - 1.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Sep-2022
pH (pH Units)	7.87
Conductivity (µS/cm)	63.20
Temperature (°C)	18.90
Volume Leachant (Litres)	0.334
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Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-82
Client Ref.: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26866371	26866382	26866394
Customer Sample Ref.	MS-BH05	MS-BH05	MS-BH05
AGS Ref.	ES1	ES4	ES7
Depth	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*		27-Sep-2022	
Ammonium Low		21-Sep-2022	21-Sep-2022
Ammonium Soil by Titration	20-Sep-2022	20-Sep-2022	20-Sep-2022
Anions by Kone (soil)	21-Sep-2022	21-Sep-2022	21-Sep-2022
Anions by Kone (w)		22-Sep-2022	22-Sep-2022
Asbestos ID in Solid Samples	23-Sep-2022	23-Sep-2022	
CEN 2:1 Leachate (1 Stage)		14-Sep-2022	14-Sep-2022
CEN Readings		20-Sep-2022	20-Sep-2022
Chromium III	16-Sep-2022	26-Sep-2022	26-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	16-Sep-2022	16-Sep-2022	21-Sep-2022
Dissolved Metals by ICP-MS		23-Sep-2022	23-Sep-2022
Easily Liberated Sulphide	16-Sep-2022	16-Sep-2022	16-Sep-2022
Elemental Sulphur	22-Sep-2022	22-Sep-2022	22-Sep-2022
EPH	20-Sep-2022	20-Sep-2022	20-Sep-2022
EPH by GCxGC-FID	16-Sep-2022	16-Sep-2022	16-Sep-2022
EPH CWG GC (S)	16-Sep-2022		
GRO by GC-FID (S)	20-Sep-2022	20-Sep-2022	20-Sep-2022
Hexavalent Chromium (s)	16-Sep-2022	16-Sep-2022	16-Sep-2022
Low Level Cyanide (W)		21-Sep-2022	21-Sep-2022
Low Level Hexavalent Chromium (w)		26-Sep-2022	26-Sep-2022
Mercury Dissolved		21-Sep-2022	21-Sep-2022
Metals in solid samples by OES	16-Sep-2022	16-Sep-2022	21-Sep-2022
Moisture at 105C		14-Sep-2022	14-Sep-2022
Nitrite by Kone (w)		17-Sep-2022	22-Sep-2022
NO3, NO2 and TON by KONE (s)	21-Sep-2022	21-Sep-2022	21-Sep-2022
OC OP Pesticides and Triazine Herb		16-Sep-2022	
PAH by GCMS	18-Sep-2022	18-Sep-2022	18-Sep-2022
PAH Spec MS - Aqueous (W)		22-Sep-2022	22-Sep-2022
pH	21-Sep-2022	21-Sep-2022	21-Sep-2022
pH Value of Filtered Water		20-Sep-2022	20-Sep-2022
Phenols by HPLC (S)	23-Sep-2022	22-Sep-2022	22-Sep-2022
Sample description	14-Sep-2022	14-Sep-2022	14-Sep-2022
Semi Volatile Organic Compounds	16-Sep-2022		
Total Organic and Inorganic Carbon		17-Sep-2022	17-Sep-2022
Total Organic Carbon	21-Sep-2022	21-Sep-2022	21-Sep-2022
Total Sulphate	16-Sep-2022	16-Sep-2022	21-Sep-2022
TPH CWG GC (S)	20-Sep-2022		
VOC MS (S)	21-Sep-2022	21-Sep-2022	21-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2293035	Issue Date	: 26-Sep-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220913-82	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 16-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 16-Sep-2022 - 26-Sep-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26870680		----		----	
				Laboratory sample ID		MS-BH05		----		----	
				Client sampling date / time		PR2293035001		----		----	
						14-Sep-2022 07:24		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	86.3	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxylinil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

SDG: 220913-82
Client Ref: F212561

Report Number: 664178
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220913-83
Your Reference:	F212561
Location:	Keadby 3
Report No:	662366
Order Number:	386/121917/CP

We received 3 samples on Saturday September 10, 2022 and 2 of these samples were scheduled for analysis which was completed on Friday September 23, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26866430	MS-BH20	ES1	0.10 - 0.10	08/09/2022
26866439	MS-BH20	ES4	0.50 - 0.50	08/09/2022
26866448	MS-BH20	ES7	1.00 - 1.00	08/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26866430	MS-BH20	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		26866448	MS-BH20	ES7	1.00 - 1.00	1kg TUB with Handle (ALE210) 250g Amber Jar (ALE215) 60g VOC (ALE215)	S
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X	
	Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X	
	Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X		X	
Chromium III	All	NDPs: 0 Tests: 2	X		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X		
pH	All	NDPs: 0 Tests: 2	X		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Results Legend								
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	Lab Sample No(s)	26866430	26866448					
	Customer Sample Reference	MS-BH20	MS-BH20					
	AGS Reference	ES1	ES7					
	Depth (m)	0.10 - 0.10	1.00 - 1.00					
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type	S	S	S	S	S	S	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X			
Sample description	All	NDPs: 0 Tests: 2	X		X			
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X			
Total Sulphate	All	NDPs: 0 Tests: 2	X		X			
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X		



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SDG: 220913-83
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Report Number: 662366
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26866430	MS-BH20	0.10 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
26866448	MS-BH20	1.00 - 1.00	Light Brown	Silty Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH20			
#	ISO17025 accredited.		F-U3C9UB-DGWW	F-OQC9UB-KTTH			
M	mCERTS accredited.		0.10 - 0.10	1.00 - 1.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	08/09/2022	08/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:33	11:47			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	10/09/2022	10/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220913-83	220913-83			
	(F) Trigger breach confirmed	SDG Ref	26866430	26866448			
	1-4*§ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	6.1	13			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	3.34	<0.35	#	#	
pH	1 pH Units	TM133	7.94	8.54	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	11.6	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	11.7	6.97			
Arsenic	<0.6 mg/kg	TM181	13	2.11	M	M	
Boron	<0.7 mg/kg	TM181	10.3	1.23	#	#	
Cadmium	<0.02 mg/kg	TM181	0.221	0.0753	M	M	
Chromium	<0.9 mg/kg	TM181	11.7	6.97	M	M	
Copper	<1.4 mg/kg	TM181	15.5	4	M	M	
Iron	<1000 mg/kg	TM181	20000	5170	#	#	
Lead	<0.7 mg/kg	TM181	52.4	8.79	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	19.2	8.98	M	M	
Selenium	<1 mg/kg	TM181	<1	<1	#	#	
Zinc	<1.9 mg/kg	TM181	73.1	17.3	M	M	
Sulphate, Total	<48 mg/kg	TM221	321	<48	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.0107	<0.0016			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.58	<0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0415	0.0088	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	4.95	<1			
EPH (C5-C40)	<35 mg/kg	TM415	45.4	<35			
EPH Surrogate % recovery**	%	TM415	98.5	106			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH20			
#	ISO17025 accredited.		F-U3C9UB-DGWV	F-OQC9UB-KTTH			
M	mCERTS accredited.		0.10 - 0.10	1.00 - 1.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	08/09/2022	08/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:33	11:47			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	10/09/2022	10/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220913-83	220913-83			
	(F) Trigger breach confirmed	SDG Ref	26866430	26866448			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	87.9	85.8			
Acenaphthene-d10 % recovery**	%	TM218	91.2	89.5			
Phenanthrene-d10 % recovery**	%	TM218	94.6	95.9			
Chrysene-d12 % recovery**	%	TM218	93	90.1			
Perylene-d12 % recovery**	%	TM218	87.4	86.5			
Naphthalene	<9 µg/kg	TM218	30.5	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	82.2	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	95.8	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	85.8	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	48.7	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	56.1	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	80.3	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	21.5	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	40.5	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	27.1	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	39.3	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	608	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH20ES1 0.10 - 0.10 SOLID 08/09/2022 00:00:00 10/09/2022 05:00:00 220913-83 26866430 TM048	23/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH20ES7 1.00 - 1.00 SOLID 08/09/2022 00:00:00 10/09/2022 05:00:00 220913-83 26866448 TM048	23/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220913-83
Client Ref.: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26866430	26866448
Customer Sample Ref.	MS-BH20	MS-BH20
AGS Ref.	ES1	ES7
Depth	0.10 - 0.10	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)

	26866430	26866448
Ammonium Soil by Titration	21-Sep-2022	20-Sep-2022
Anions by Kone (soil)	22-Sep-2022	21-Sep-2022
Asbestos ID in Solid Samples	23-Sep-2022	23-Sep-2022
Chromium III	22-Sep-2022	19-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	21-Sep-2022	21-Sep-2022
Easily Liberated Sulphide	21-Sep-2022	16-Sep-2022
Elemental Sulphur	23-Sep-2022	22-Sep-2022
EPH	23-Sep-2022	20-Sep-2022
EPH by GCxGC-FID	21-Sep-2022	16-Sep-2022
GRO by GC-FID (S)	23-Sep-2022	20-Sep-2022
Hexavalent Chromium (s)	21-Sep-2022	16-Sep-2022
Metals in solid samples by OES	23-Sep-2022	16-Sep-2022
NO3, NO2 and TON by KONE (s)	22-Sep-2022	21-Sep-2022
PAH by GCMS	21-Sep-2022	18-Sep-2022
pH	21-Sep-2022	21-Sep-2022
Phenols by HPLC (S)	23-Sep-2022	23-Sep-2022
Sample description	14-Sep-2022	14-Sep-2022
Total Organic Carbon	22-Sep-2022	21-Sep-2022
Total Sulphate	22-Sep-2022	21-Sep-2022
VOC MS (S)	21-Sep-2022	21-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220913-83
Client Ref: F212561

Report Number: 662366
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 11 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220917-33
Your Reference: F212561
Location: Keadby 3
Report No: 664170
Order Number: 386/121917/CP

This report has been revised and directly supersedes 663417 in its entirety.

We received 4 samples on Wednesday September 14, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday October 11, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26890506	MS-BH08	ES2	0.10 - 0.30	09/09/2022
26890513	MS-BH08	ES4	0.50 - 0.70	09/09/2022
26890520	MS-BH08	ES8	0.90 - 0.90	09/09/2022
26890527	MS-BH08	ES9	1.20 - 1.20	09/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
26890506	MS-BH08	ES2	0.10 - 0.30	60g VOC (ALE215) 1kg TUB with Handle (ALE260)	S
26890513	MS-BH08	ES4	0.50 - 0.70	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S
26890520	MS-BH08	ES8	0.90 - 0.90	60g VOC (ALE215) 250g Amber Jar (ALE210)	S

Analyte	All	NDPs: 0 Tests: 1	26890506	26890513	26890520
Acid herbicides*	All	NDPs: 0 Tests: 1	X		
Ammonium Low	All	NDPs: 0 Tests: 1		X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3	X	X	X
Anions by Kone (soil)	All	NDPs: 0 Tests: 3	X	X	X
Anions by Kone (w)	All	NDPs: 0 Tests: 1		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X	X	
CEN Readings	All	NDPs: 0 Tests: 1		X	
Chromium III	All	NDPs: 0 Tests: 4	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3	X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1		X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3	X	X	X
Elemental Sulphur	All	NDPs: 0 Tests: 3	X	X	X
EPH	All	NDPs: 0 Tests: 3	X	X	X
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3	X	X	X
EPH CWG GC (S)	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26890506	MS-BH08	ES2	0.10 - 0.30	1kg TUB with Handle (ALE260)	S
		26890513	MS-BH08	ES4	0.50 - 0.70	250g Amber Jar (ALE210)	S
		26890520	MS-BH08	ES8	0.90 - 0.90	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1					
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1					
Mercury Dissolved	All	NDPs: 0 Tests: 1					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					
PAH by GCMS	All	NDPs: 0 Tests: 3					
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1					
pH	All	NDPs: 0 Tests: 3					
pH Value of Filtered Water	All	NDPs: 0 Tests: 1					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3					
Sample description	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

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SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	26890506	26890513	26890520
Customer Sample Reference	MS-BH08	MS-BH08	MS-BH08
AGS Reference	ES2	ES4	ES8
Depth (m)	0.10 - 0.30	0.50 - 0.70	0.90 - 0.90
Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type	S	S	S

Parameter	All	NDPs: 0 Tests: 1	26890506	26890513	26890520
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1		X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1		X	
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1		X	
VOC MS (S)	All	NDPs: 0 Tests: 3	X	X	X



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26890506	MS-BH08	0.10 - 0.30	Dark Brown	Loamy Sand	Vegetation	Stones
26890513	MS-BH08	0.50 - 0.70	Dark Brown	Loamy Sand	Vegetation	Stones
26890520	MS-BH08	0.90 - 0.90	Light Brown	Sand	None	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Results Legend		Customer Sample Ref.		MS-BH08	MS-BH08	MS-BH08		
#	ISO17025 accredited.			F-FH5BUB-OVJ3	F-ST5BUB-60JY	F-LN6BUB-EYCS		
M	mCERTS accredited.			0.10 - 0.30	0.50 - 0.70	0.90 - 0.90		
aq	Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.			09/09/2022	09/09/2022	09/09/2022		
tot.unfilt	Total / unfiltered sample.			11:05	11:13	11:30		
	* Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)		14/09/2022	14/09/2022	14/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type		220917-33	220917-33	220917-33		
(F)	Trigger breach confirmed	Date Sampled		26890506	26890513	26890520		
1-4*§§	Sample deviation (see appendix)	Date Received		ES2	ES4	ES8		
		SDG Ref						
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	16	15	11			
2,4,5-T*	<0.01 mg/kg	SUB	<0.01					
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01					
2,4-D*	<0.01 mg/kg	SUB	<0.01					
2,4-DB*	<0.01 mg/kg	SUB	<0.01					
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01					
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01					
Acifluorfen*	<0.01 mg/kg	SUB	<0.01					
Bentazone*	<0.01 mg/kg	SUB	<0.01					
Bromoxynil*	<0.01 mg/kg	SUB	<0.01					
Dicamba*	<0.01 mg/kg	SUB	<0.01					
Diclofop*	<0.01 mg/kg	SUB	<0.01					
Dinoseb*	<0.01 mg/kg	SUB	<0.01					
DNOC*	<0.01 mg/kg	SUB	<0.01					
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01					
loxylnil*	<0.01 mg/kg	SUB	<0.01					
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01					
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01					
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01					
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01					
Triclopyr*	<0.01 mg/kg	SUB	<0.01					
Triclosan*	<0.01 mg/kg	SUB	<0.01					
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15			
			M	M	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12			
			M	M	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			
			M	M	M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			
			M	M	M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015			
			M	M	M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035			
			M	M	M			
Soil Organic Matter (SOM)	<0.35 %	TM132	4.19	4.52	<0.35			
			#	#	#			
pH	1 pH Units	TM133	8.26	8.33	7.74			
			M	M	M			
Sulphur, Elemental	<10 mg/kg	TM136	23.6	<10	<10			
			M	M	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6			
			M	M	M			
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1			
			M	M	M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Table with columns: Results Legend, Customer Sample Ref., MS-BH08 (F-FH5BUB-OVJ3), MS-BH08 (F-ST5BUB-60JY), MS-BH08 (F-LN6BUB-EYCS). Rows include various chemical components like Cyanide, Sulphide, Chromium, Arsenic, Boron, Cadmium, etc., with LOD/Units, Method, and numerical results.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH08				
#	ISO17025 accredited.		F-FH5BUB-OVJ3				
M	mCERTS accredited.	Depth (m)	0.10 - 0.30				
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)				
diss.filter	Dissolved / filtered sample.	Date Sampled	09/09/2022				
tot.unfiltr	Total / unfiltered sample.	Date Received	11/05				
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-33				
(F)	Trigger breach confirmed	SDG Ref	26890506				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES2				
		AGS Reference					
Component	LOD/Units	Method					
Dichlorvos	<50 µg/kg	TM073	<50				
Mevinphos	<50 µg/kg	TM073	<50				
Phorate	<50 µg/kg	TM073	<50				
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Diazinon	<50 µg/kg	TM073	<50				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50				
Disulfoton	<50 µg/kg	TM073	<50				
Heptachlor	<50 µg/kg	TM073	<50				
Aldrin	<50 µg/kg	TM073	<50				
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Methyl parathion	<50 µg/kg	TM073	<50				
Malathion	<50 µg/kg	TM073	<50				
Fenitrothion	<50 µg/kg	TM073	<50				
Heptachlor epoxide	<50 µg/kg	TM073	<50				
Parathion	<50 µg/kg	TM073	<50				
Endosulphan I	<50 µg/kg	TM073	<50				
p,p-DDE	<50 µg/kg	TM073	<50				
Dieldrin	<50 µg/kg	TM073	<50				
Endrin	<50 µg/kg	TM073	<50				
p,p-TDE (DDD)	<50 µg/kg	TM073	<50				
Ethion	<50 µg/kg	TM073	<50				
Endosulphan II	<50 µg/kg	TM073	<50				
p,p-DDT	<50 µg/kg	TM073	<50				
p,p-Methoxychlor	<50 µg/kg	TM073	<50				
Endosulphan sulphate	<50 µg/kg	TM073	<50				
Azinphos-methyl	<50 µg/kg	TM073	<50				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH08	MS-BH08	MS-BH08		
#	ISO17025 accredited.		F-FH5BUB-OVJ3	F-ST5BUB-60JY	F-LN6BUB-EYCS		
M	mCERTS accredited.		0.10 - 0.30	0.50 - 0.70	0.90 - 0.90		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	09/09/2022	09/09/2022	09/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:05	11:13	11:30		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022	14/09/2022	14/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-33	220917-33	220917-33		
(F)	Trigger breach confirmed	SDG Ref	26890506	26890513	26890520		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES4	ES8		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	87.7	87.6	90.4		
Acenaphthene-d10 % recovery**	%	TM218	90.4	86.5	88.9		
Phenanthrene-d10 % recovery**	%	TM218	92.7	85.7	91.9		
Chrysene-d12 % recovery**	%	TM218	84.4	78.1	84.4		
Perylene-d12 % recovery**	%	TM218	77.6	77.6	80.8		
Naphthalene	<9 µg/kg	TM218	13.9	216	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	37.9	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	41.5	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	53.5	291	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	<16	77.6	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	62.9	367	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	52.4	320	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	21.7	148	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	28.9	157	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	37.7	183	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	72.2	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	18.3	143	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	99.4	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	91.5	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	289	2240	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH08			
#	ISO17025 accredited.		F-ST5BUB-60JY			
M	mCERTS accredited.		0.50 - 0.70			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	09/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:13			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-33			
(F)	Trigger breach confirmed	SDG Ref	26890513			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES4			
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH08 F-ST5BUB-60JY 0.50 - 0.70 Soil/Solid (S) 09/09/2022 11:13 14/09/2022 220917-33 26890513 ES4				
Component	LOD/Units	Method	AGS Reference				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	130				
Benzo(a)anthracene	<100 µg/kg	TM157	141				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	184				
Fluoranthene	<100 µg/kg	TM157	304				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	215				
Pyrene	<100 µg/kg	TM157	270				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH08							
M mCERTS accredited.		F-ST5BUB-60JY							
AQ Aqueous / settled sample.		0.50 - 0.70							
Diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		09/09/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		11:13							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		14/09/2022							
(F) Trigger breach confirmed		220917-33							
1-4* @ Sample deviation (see appendix)		26890513							
		ES4							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	84.9	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1250	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	9660	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	11700						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	31600						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1470	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	14800	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	3650						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	19900						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	31600						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH08 F-FH5BUB-OVJ3 0.10 - 0.30 Soil/Solid (S) 09/09/2022 11:05 14/09/2022 220917-33 26890506 ES2	MS-BH08 F-ST5BUB-60JY 0.50 - 0.70 Soil/Solid (S) 09/09/2022 11:13 14/09/2022 220917-33 26890513 ES4	MS-BH08 F-LN6BUB-EYCS 0.90 - 0.90 Soil/Solid (S) 09/09/2022 11:30 14/09/2022 220917-33 26890520 ES8		
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	115 @	115 @	112 @		
Toluene-d8**	%	TM116	96 @	98.2 @	98.8 @		
4-Bromofluorobenzene**	%	TM116	88.5 @	93.7 @	93.6 @		
Dichlorodifluoromethane	<6 µg/kg	TM116		<120 @ #			
Chloromethane	<7 µg/kg	TM116		<140 @ #			
Vinyl Chloride	<6 µg/kg	TM116		<120 @ M			
Bromomethane	<10 µg/kg	TM116		<200 @ M			
Chloroethane	<10 µg/kg	TM116		<200 @ M			
Trichlorofluoromethane	<6 µg/kg	TM116		<120 @ M			
1,1-Dichloroethene	<10 µg/kg	TM116		<200 @ #			
Carbon Disulphide	<7 µg/kg	TM116		<140 @ M			
Dichloromethane	<10 µg/kg	TM116		<370 @ #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100 @ M	<200 @ M	<10 @ M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<200 @ M			
1,1-Dichloroethane	<8 µg/kg	TM116		<160 @ M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<120 @ M			
2,2-Dichloropropane	<10 µg/kg	TM116		<200 @			
Bromochloromethane	<10 µg/kg	TM116		<200 @ M			
Chloroform	<8 µg/kg	TM116		<160 @ M			
1,1,1-Trichloroethane	<7 µg/kg	TM116		<140 @ M			
1,1-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Carbontetrachloride	<10 µg/kg	TM116		<200 @ M			
1,2-Dichloroethane	<5 µg/kg	TM116		<100 @ M			
Benzene	<9 µg/kg	TM116	<90 @ M	<180 @ M	<9 @ M		
Trichloroethene	<9 µg/kg	TM116		<180 @ #			
1,2-Dichloropropane	<10 µg/kg	TM116		<200 @ M			
Dibromomethane	<9 µg/kg	TM116		<180 @ M			
Bromodichloromethane	<7 µg/kg	TM116		<140 @ M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Toluene	<7 µg/kg	TM116	<70 @ M	<140 @ M	<7 @ M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<200 @ M			
1,3-Dichloropropane	<7 µg/kg	TM116		<140 @ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH08 F-FH5BUB-OVJ3 0.10 - 0.30 Soil/Solid (S) 09/09/2022 11:05 14/09/2022 220917-33 26890506 ES2	MS-BH08 F-ST5BUB-60JY 0.50 - 0.70 Soil/Solid (S) 09/09/2022 11:13 14/09/2022 220917-33 26890513 ES4	MS-BH08 F-LN6BUB-EYCS 0.90 - 0.90 Soil/Solid (S) 09/09/2022 11:30 14/09/2022 220917-33 26890520 ES8		
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116		<100 @ M			
Dibromochloromethane	<10 µg/kg	TM116		<200 @ M			
1,2-Dibromoethane	<10 µg/kg	TM116		<200 @ M			
Chlorobenzene	<5 µg/kg	TM116		<100 @ M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<200 @ M			
Ethylbenzene	<4 µg/kg	TM116	<40 @ M	<80 @ M	<4 @ M		
p/m-Xylene	<10 µg/kg	TM116	<100 @ #	<200 @ #	<10 @ #		
o-Xylene	<10 µg/kg	TM116	<100 @ M	<200 @ M	<10 @ M		
Styrene	<10 µg/kg	TM116		<200 @ #			
Bromofom	<10 µg/kg	TM116		<200 @ M			
Isopropylbenzene	<5 µg/kg	TM116		<100 @ #			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<200 @ #			
1,2,3-Trichloropropane	<16 µg/kg	TM116		<320 @ M			
Bromobenzene	<10 µg/kg	TM116		<200 @ M			
Propylbenzene	<10 µg/kg	TM116		<200 @ M			
2-Chlorotoluene	<9 µg/kg	TM116		<180 @ M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<160 @ M			
4-Chlorotoluene	<10 µg/kg	TM116		<200 @ M			
tert-Butylbenzene	<14 µg/kg	TM116		<280 @ #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<180 @ #			
sec-Butylbenzene	<10 µg/kg	TM116		<200 @			
4-Isopropyltoluene	<10 µg/kg	TM116		<200 @			
1,3-Dichlorobenzene	<8 µg/kg	TM116		<160 @ M			
1,4-Dichlorobenzene	<5 µg/kg	TM116		<100 @ M			
n-Butylbenzene	<11 µg/kg	TM116		<220 @			
1,2-Dichlorobenzene	<10 µg/kg	TM116		<200 @ M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<280 @ M			
Tert-amyl methyl ether	<10 µg/kg	TM116		<200 @ #			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<400 @			
Hexachlorobutadiene	<20 µg/kg	TM116		<400 @			
Naphthalene	<13 µg/kg	TM116		<260 @ M			
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<400 @ #			
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<400			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH08E2 0.10 - 0.30 SOLID 09/09/2022 00:00:00 14/09/2022 05:00:00 220917-33 26890506 TM048	28/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH08E4 0.50 - 0.70 SOLID 09/09/2022 00:00:00 14/09/2022 05:00:00 220917-33 26890513 TM048	28/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	18.3
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	84.5
Particle Size <4mm	>95%		

Case	
SDG	220917-33
Lab Sample Number(s)	26890513
Sampled Date	09-Sep-2022
Customer Sample Ref.	MS-BH08 ES4
Depth (m)	0.50 - 0.70

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8.3	<0.001	-	-
Sulphate (soluble)	270	<2	540	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	7.75	<3	15.5	<6
Ammoniacal Nitrogen as N	0.0505	<0.01	0.101	<0.02
Arsenic	0.000838	<0.0005	0.00168	<0.001
Nitrate as NO3	3.01	<0.3	6.02	<0.6
Total Ammonium Low as NH4	0.65	<0.01	1.3	<0.02
Boron	0.0619	<0.01	0.124	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	<0.001	<0.001	<0.002	<0.002
Copper	0.00695	<0.0003	0.0139	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.00217	<0.0004	0.00434	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.0067	<0.001	0.0134	<0.002
Calcium (Dis.Filt) mg/l	130	<0.2	260	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	352	<0.65	704	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Acenaphthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Phenanthrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluorene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Chrysene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002

Leach Test Information

Date Prepared	18-Sep-2022
pH (pH Units)	8.34
Conductivity (µS/cm)	546.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

11/10/2022 08:47:29

08:46:46 11/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	18.3
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	84.5
Particle Size <4mm	>95%		

Case	
SDG	220917-33
Lab Sample Number(s)	26890513
Sampled Date	09-Sep-2022
Customer Sample Ref.	MS-BH08 ES4
Depth (m)	0.50 - 0.70

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.000008	<0.000008
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.000328	<0.000328

Leach Test Information

Date Prepared	18-Sep-2022
pH (pH Units)	8.34
Conductivity (µS/cm)	546.00
Temperature (°C)	17.00
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

11/10/2022 08:47:29

08:46:46 11/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-33
Client Ref.: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Test Completion Dates

Lab Sample No(s)	26890506	26890513	26890520
Customer Sample Ref.	MS-BH08	MS-BH08	MS-BH08
AGS Ref.	ES2	ES4	ES8
Depth	0.10 - 0.30	0.50 - 0.70	0.90 - 0.90
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	03-Oct-2022		
Ammonium Low		28-Sep-2022	
Ammonium Soil by Titration	27-Sep-2022	20-Sep-2022	20-Sep-2022
Anions by Kone (soil)	22-Sep-2022	22-Sep-2022	22-Sep-2022
Anions by Kone (w)		28-Sep-2022	
Asbestos ID in Solid Samples	28-Sep-2022	28-Sep-2022	
CEN 2:1 Leachate (1 Stage)		20-Sep-2022	
CEN Readings		22-Sep-2022	
Chromium III	26-Sep-2022	29-Sep-2022	26-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	22-Sep-2022	22-Sep-2022	22-Sep-2022
Dissolved Metals by ICP-MS		11-Oct-2022	
Easily Liberated Sulphide	22-Sep-2022	22-Sep-2022	22-Sep-2022
Elemental Sulphur	27-Sep-2022	23-Sep-2022	27-Sep-2022
EPH	27-Sep-2022	28-Sep-2022	27-Sep-2022
EPH by GCxGC-FID	22-Sep-2022	22-Sep-2022	22-Sep-2022
EPH CWG GC (S)		21-Sep-2022	
GRO by GC-FID (S)	27-Sep-2022	27-Sep-2022	27-Sep-2022
Hexavalent Chromium (s)	26-Sep-2022	26-Sep-2022	26-Sep-2022
Low Level Cyanide (W)		23-Sep-2022	
Low Level Hexavalent Chromium (w)		26-Sep-2022	
Mercury Dissolved		23-Sep-2022	
Metals in solid samples by OES	22-Sep-2022	22-Sep-2022	23-Sep-2022
Moisture at 105C		18-Sep-2022	
Nitrite by Kone (w)		23-Sep-2022	
NO3, NO2 and TON by KONE (s)	22-Sep-2022	21-Sep-2022	21-Sep-2022
OC OP Pesticides and Triazine Herb	28-Sep-2022		
PAH by GCMS	23-Sep-2022	21-Sep-2022	23-Sep-2022
PAH Spec MS - Aqueous (W)		26-Sep-2022	
pH	23-Sep-2022	23-Sep-2022	22-Sep-2022
pH Value of Filtered Water		26-Sep-2022	
Phenols by HPLC (S)	23-Sep-2022	23-Sep-2022	23-Sep-2022
Sample description	17-Sep-2022	17-Sep-2022	17-Sep-2022
Semi Volatile Organic Compounds		21-Sep-2022	
Total Organic and Inorganic Carbon		23-Sep-2022	
Total Organic Carbon	26-Sep-2022	27-Sep-2022	27-Sep-2022
Total Sulphate	21-Sep-2022	21-Sep-2022	21-Sep-2022
TPH CWG GC (S)		28-Sep-2022	
VOC MS (S)	28-Sep-2022	28-Sep-2022	27-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2297125	Issue Date	: 03-Oct-2022
Customer	: ALS Life Sciences Ltd	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside United Kingdom	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220917-33	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 27-Sep-2022
		Quote number	: PR2018ALSAL-GB0004 (CZ-256-18-0022)
Site	: ----	Date of test	: 27-Sep-2022 - 03-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

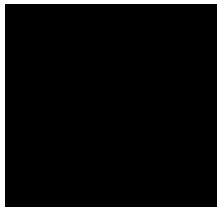
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26892884		----		----	
				Laboratory sample ID		MS-BH08		----		----	
				Client sampling date / time		PR2297125001		----		----	
						17-Sep-2022 10:14		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	81.9	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxylinil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

SDG: 220917-33
Client Ref: F212561

Report Number: 664170
Location: Keadby 3

Superseded Report: 663417

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 09 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220917-34
Your Reference: F212561
Location: Keadby 3
Report No: 664022
Order Number: 386/121917/CP

This report has been revised and directly supersedes 662862 in its entirety.

We received 4 samples on Wednesday September 14, 2022 and 3 of these samples were scheduled for analysis which was completed on Sunday October 09, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

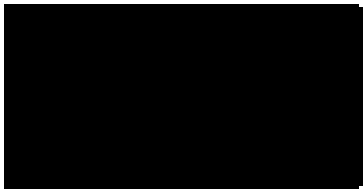
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26890536	MS-BH19	ES1	0.10 - 0.10	12/09/2022
26890553	MS-BH19	ES4	0.50 - 0.50	12/09/2022
26890562	MS-BH19	ES7	1.00 - 1.00	12/09/2022
26890546	MS-BH19	ES10	1.20 - 1.20	12/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26890536	MS-BH19	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
		26890553	MS-BH19	ES4	0.50 - 0.50	250g Amber Jar (ALE210)	S
		26890546	MS-BH19	ES10	1.20 - 1.20	60g VOC (ALE215)	S
						250g Amber Jar (ALE215)	S
						60g VOC (ALE215)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	26890536	26890553	26890546
Customer Sample Reference	MS-BH19	MS-BH19	MS-BH19
AGS Reference	ES1	ES4	ES10
Depth (m)	0.10 - 0.10	0.50 - 0.50	1.20 - 1.20
Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 60g VOC (ALE215)	250g Amber Jar (ALE210) 60g VOC (ALE215)
Sample Type	S	S	S

Parameter	All	NDPs: 0 Tests: 1	26890536	26890553	26890546
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1			X
PAH by GCMS	All	NDPs: 0 Tests: 3	X	X	X
pH	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1		X	
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1		X	
VOC MS (S)	All	NDPs: 0 Tests: 3		X	X



CERTIFICATE OF ANALYSIS

Validated

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26890536	MS-BH19	0.10 - 0.10	Dark Brown	Loamy Sand	Vegetation	Stones
26890546	MS-BH19	1.20 - 1.20	Light Brown	Sand	None	Stones
26890553	MS-BH19	0.50 - 0.50	Dark Brown	Sandy Clay	Vegetation	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Results Legend		Customer Sample Ref.	MS-BH19	MS-BH19	MS-BH19		
#	ISO17025 accredited.		F-H2RGUB-DQRC	F-W2RGUB-UHVV	F-43RGUB-EOA9		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	12/09/2022	12/09/2022	12/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:39	11:40	11:40		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022	14/09/2022	14/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-34	220917-34	220917-34		
(F)	Trigger breach confirmed	SDG Ref	26890536	26890553	26890546		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES10		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	38	8.3		
2,4,5-T*	<0.01 mg/kg	SUB			<0.01		
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB			<0.01		
2,4-D*	<0.01 mg/kg	SUB			<0.01		
2,4-DB*	<0.01 mg/kg	SUB			<0.01		
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB			<0.01		
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB			<0.01		
Acifluorfen*	<0.01 mg/kg	SUB			<0.01		
Bentazone*	<0.01 mg/kg	SUB			<0.01		
Bromoxynil*	<0.01 mg/kg	SUB			<0.01		
Dicamba*	<0.01 mg/kg	SUB			<0.01		
Diclofop*	<0.01 mg/kg	SUB			<0.01		
Dinoseb*	<0.01 mg/kg	SUB			<0.01		
DNOC*	<0.01 mg/kg	SUB			<0.01		
Fluroxypyr*	<0.01 mg/kg	SUB			<0.01		
loxylnil*	<0.01 mg/kg	SUB			<0.01		
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB			<0.01		
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB			<0.01		
Mecoprop (MCP)*	<0.01 mg/kg	SUB			<0.01		
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB			<0.01		
Triclopyr*	<0.01 mg/kg	SUB			<0.01		
Triclosan*	<0.01 mg/kg	SUB			<0.01		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15		
			M	M	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12		
			M	M	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
			M	M	M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01		
			M	M	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015		
			M	M	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035		
			M	M	M		
Soil Organic Matter (SOM)	<0.35 %	TM132	3.47	19.5	<0.35		
			#	#	#		
pH	1 pH Units	TM133	8.17	8.02	8.5		
			M	M	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	<10		
			M	M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6		
			M	M	M		
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1		
			M	M	M		



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Results Legend		Customer Sample Ref.	MS-BH19 F-H2RGUB-DORC 0.10 - 0.10 Soil/Solid (S) 12/09/2022 11:39 14/09/2022 220917-34 26890536 ES1	MS-BH19 F-W2RGUB-UHVV 0.50 - 0.50 Soil/Solid (S) 12/09/2022 11:40 14/09/2022 220917-34 26890553 ES4	MS-BH19 F-43RGUB-EOA9 1.20 - 1.20 Soil/Solid (S) 12/09/2022 11:40 14/09/2022 220917-34 26890546 ES10
Component	LOD/Units	Method			
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M
Chromium, Trivalent	<0.9 mg/kg	TM181	12.5	6.56	4.69
Arsenic	<0.6 mg/kg	TM181	13.6 M	4.5 M	1.04 M
Boron	<0.7 mg/kg	TM181	13.7 #	7.86 #	2.01 #
Cadmium	<0.02 mg/kg	TM181	0.278 M	0.0911 M	0.0509 M
Chromium	<0.9 mg/kg	TM181	12.5 M	6.56 M	4.69 M
Copper	<1.4 mg/kg	TM181	14.9 M	5.44 M	3.55 M
Iron	<1000 mg/kg	TM181	19700 #	9080 #	3100 #
Lead	<0.7 mg/kg	TM181	48.3 M	20.9 M	6.66 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	18.7 M	8.92 M	8.04 M
Selenium	<1 mg/kg	TM181	1.01 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	67.9 M	26.1 M	11.6 M
Sulphate, Total	<48 mg/kg	TM221	403 M	563 M	72.8 M
Total Sulphur (ASB)	<0.0016 %	TM221	0.0134	0.0188	0.00243
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.39	1.03	0.14
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0609 M	0.0554 M	<0.004 M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	2.83	10.2	<1
EPH (C5-C40)	<35 mg/kg	TM415	53	208	<35
EPH Surrogate % recovery**	%	TM415	112	83.2	99.9
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	53 M	208 M	<35 M



CERTIFICATE OF ANALYSIS

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Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH19				
#	ISO17025 accredited.		F-43RGUB-EOA9				
M	mCERTS accredited.		1.20 - 1.20				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	12/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:40				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-34				
(F)	Trigger breach confirmed	SDG Ref	26890546				
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES10				
		AGS Reference					
Component	LOD/Units	Method					
Dichlorvos	<50 µg/kg	TM073	<50				
Mevinphos	<50 µg/kg	TM073	<50				
Phorate	<50 µg/kg	TM073	<50				
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Diazinon	<50 µg/kg	TM073	<50				
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50				
Disulfoton	<50 µg/kg	TM073	<50				
Heptachlor	<50 µg/kg	TM073	<50				
Aldrin	<50 µg/kg	TM073	<50				
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50				
Methyl parathion	<50 µg/kg	TM073	<50				
Malathion	<50 µg/kg	TM073	<50				
Fenitrothion	<50 µg/kg	TM073	<50				
Heptachlor epoxide	<50 µg/kg	TM073	<50				
Parathion	<50 µg/kg	TM073	<50				
Endosulphan I	<50 µg/kg	TM073	<50				
p,p-DDE	<50 µg/kg	TM073	<50				
Dieldrin	<50 µg/kg	TM073	<50				
Endrin	<50 µg/kg	TM073	<50				
p,p-TDE (DDD)	<50 µg/kg	TM073	<50				
Ethion	<50 µg/kg	TM073	<50				
Endosulphan II	<50 µg/kg	TM073	<50				
p,p-DDT	<50 µg/kg	TM073	<50				
p,p-Methoxychlor	<50 µg/kg	TM073	<50				
Endosulphan sulphate	<50 µg/kg	TM073	<50				
Azinphos-methyl	<50 µg/kg	TM073	<50				



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SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH19	MS-BH19	MS-BH19		
#	ISO17025 accredited.		F-H2RGUB-DQRC	F-W2RGUB-UHV	F-43RGUB-E0A9		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	12/09/2022	12/09/2022	12/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:39	11:40	11:40		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022	14/09/2022	14/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-34	220917-34	220917-34		
	(F) Trigger breach confirmed	SDG Ref	26890536	26890553	26890546		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES10		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	88.8	86.5	84.5		
Acenaphthene-d10 % recovery**	%	TM218	86.9	88.2	89.2		
Phenanthrene-d10 % recovery**	%	TM218	82.8	89.9	91.7		
Chrysene-d12 % recovery**	%	TM218	74	77.3	85.3		
Perylene-d12 % recovery**	%	TM218	74.5	74	84.6		
Naphthalene	<9 µg/kg	TM218	17	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	52.8	<15	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	76.6	<17	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	67.6	<15	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	35.6	<14	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	47.4	<10	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	66.6	<15	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	21.8	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	38.2	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	38.5	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	41.7	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	504	<118	<118		



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Report Number: 664022
Location: Keadby 3

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Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH19			
#	ISO17025 accredited.		F-W2RGUB-UHVV			
M	mCERTS accredited.		0.50 - 0.50			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	12/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:40			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-34			
(F)	Trigger breach confirmed	SDG Ref	26890553			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES4			
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

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SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH19 F-W2RGUB-UHVV 0.50 - 0.50 Soil/Solid (S) 12/09/2022 11:40 14/09/2022 220917-34 26890553 ES4				
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

TPH CWG (S)

Results Legend		Customer Sample Ref.		MS-BH19							
#	ISO17025 accredited.				F-W2RGUB-UHVV						
M	mCERTS accredited.				0.50 - 0.50						
aq	Aqueous / settled sample.				Soil/Solid (S)						
diss.filt	Dissolved / filtered sample.				12/09/2022						
tot.unfilt	Total / unfiltered sample.				11:40						
	* Subcontracted - refer to subcontractor report for accreditation status.				14/09/2022						
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				220917-34						
	(F) Trigger breach confirmed				26890553						
	1-4* @ Sample deviation (see appendix)				ES4						
Component	LOD/Units	Method									
GRO Surrogate % recovery**	%	TM089	87.1	@							
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	11.2	@							
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	12.8	@							
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	12.8	@							
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#							
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#							
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2890	#							
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	21200	#							
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	7580	#							
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	31700	#							
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	132000	#							
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@							
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@							
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@							
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#							
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#							
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	11000	#							
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	58800	#							
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	28900	#							
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	2550	#							
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	100000	#							
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	132000	#							
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@							
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@							



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH19	MS-BH19	MS-BH19		
#	ISO17025 accredited.		F-H2RGUB-DQRC	F-W2RGUB-UHVV	F-43RGUB-E0A9		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	12/09/2022	12/09/2022	12/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:39	11:40	11:40		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/09/2022	14/09/2022	14/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-34	220917-34	220917-34		
(F)	Trigger breach confirmed	SDG Ref	26890536	26890553	26890546		
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES10		
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	114 @	117 @	111 @		
Toluene-d8**	%	TM116	97.8 @	96.4 @	98.6 @		
4-Bromofluorobenzene**	%	TM116	97.1 @	90.5 @	98.3 @		
Dichlorodifluoromethane	<6 µg/kg	TM116		<120 @ #			
Chloromethane	<7 µg/kg	TM116		<140 @ #			
Vinyl Chloride	<6 µg/kg	TM116		<120 @ M			
Bromomethane	<10 µg/kg	TM116		<200 @ M			
Chloroethane	<10 µg/kg	TM116		<200 @ M			
Trichlorofluoromethane	<6 µg/kg	TM116		<120 @ M			
1,1-Dichloroethene	<10 µg/kg	TM116		<200 @ #			
Carbon Disulphide	<7 µg/kg	TM116		<140 @ M			
Dichloromethane	<10 µg/kg	TM116		<480 @ #			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<200 @ M	<10 @ M		
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<200 @ M			
1,1-Dichloroethane	<8 µg/kg	TM116		<160 @ M			
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<120 @ M			
2,2-Dichloropropane	<10 µg/kg	TM116		<200 @			
Bromochloromethane	<10 µg/kg	TM116		<200 @ M			
Chloroform	<8 µg/kg	TM116		<160 @ M			
1,1,1-Trichloroethane	<7 µg/kg	TM116		<140 @ M			
1,1-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Carbontetrachloride	<10 µg/kg	TM116		<200 @ M			
1,2-Dichloroethane	<5 µg/kg	TM116		<100 @ M			
Benzene	<9 µg/kg	TM116	<180 @ M	<180 @ M	<9 @ M		
Trichloroethene	<9 µg/kg	TM116		<180 @ #			
1,2-Dichloropropane	<10 µg/kg	TM116		<200 @ M			
Dibromomethane	<9 µg/kg	TM116		<180 @ M			
Bromodichloromethane	<7 µg/kg	TM116		<140 @ M			
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @ M			
Toluene	<7 µg/kg	TM116	<140 @ M	<140 @ M	<7 @ M		
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<200 @			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<200 @ M			
1,3-Dichloropropane	<7 µg/kg	TM116		<140 @ M			



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SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH19 F-H2RGUB-DORC 0.10 - 0.10 Soil/Solid (S) 12/09/2022 11:39 14/09/2022 220917-34 26890536 ES1	MS-BH19 F-W2RGUB-UHVV 0.50 - 0.50 Soil/Solid (S) 12/09/2022 11:40 14/09/2022 220917-34 26890553 ES4	MS-BH19 F-43RGUB-EOA9 1.20 - 1.20 Soil/Solid (S) 12/09/2022 11:40 14/09/2022 220917-34 26890546 ES10			
Component	LOD/Units	Method						
Tetrachloroethene	<5 µg/kg	TM116		<100				
				@ M				
Dibromochloromethane	<10 µg/kg	TM116		<200				
				@ M				
1,2-Dibromoethane	<10 µg/kg	TM116		<200				
				@ M				
Chlorobenzene	<5 µg/kg	TM116		<100				
				@ M				
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<200				
				@ M				
Ethylbenzene	<4 µg/kg	TM116	<80	<80	<4			
			@ M	@ M	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	<200	<10			
			@ #	@ #	@ #			
o-Xylene	<10 µg/kg	TM116	<200	<200	<10			
			@ M	@ M	@ M			
Styrene	<10 µg/kg	TM116		<200				
				@ #				
Bromofom	<10 µg/kg	TM116		<200				
				@ M				
Isopropylbenzene	<5 µg/kg	TM116		<100				
				@ #				
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<200				
				@ #				
1,2,3-Trichloropropane	<16 µg/kg	TM116		<320				
				@ M				
Bromobenzene	<10 µg/kg	TM116		<200				
				@ M				
Propylbenzene	<10 µg/kg	TM116		<200				
				@ M				
2-Chlorotoluene	<9 µg/kg	TM116		<180				
				@ M				
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<160				
				@ M				
4-Chlorotoluene	<10 µg/kg	TM116		<200				
				@ M				
tert-Butylbenzene	<14 µg/kg	TM116		<280				
				@ #				
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<180				
				@ #				
sec-Butylbenzene	<10 µg/kg	TM116		<200				
				@				
4-Isopropyltoluene	<10 µg/kg	TM116		<200				
				@				
1,3-Dichlorobenzene	<8 µg/kg	TM116		<160				
				@ M				
1,4-Dichlorobenzene	<5 µg/kg	TM116		<100				
				@ M				
n-Butylbenzene	<11 µg/kg	TM116		<220				
				@				
1,2-Dichlorobenzene	<10 µg/kg	TM116		<200				
				@ M				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<280				
				@ M				
Tert-amyl methyl ether	<10 µg/kg	TM116		<200				
				@ #				
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<400				
				@				
Hexachlorobutadiene	<20 µg/kg	TM116		<400				
				@				
Naphthalene	<13 µg/kg	TM116		<260				
				@ M				
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<400				
				@ #				
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<400				



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SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
28/09/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	MS-BH19ES1
Depth (m)	0.10 - 0.10
Sample Type	SOLID
Date Sampled	12/09/2022 00:00:00
Date Received	14/09/2022 05:00:00
SDG	220917-34
Original Sample	26890536
Method Number	TM048



CERTIFICATE OF ANALYSIS

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SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-34
Client Ref.: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Test Completion Dates

Lab Sample No(s)	26890536	26890546	26890553
Customer Sample Ref.	MS-BH19	MS-BH19	MS-BH19
AGS Ref.	ES1	ES10	ES4
Depth	0.10 - 0.10	1.20 - 1.20	0.50 - 0.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Test Name	26890536	26890546	26890553
Acid herbicides*		09-Oct-2022	
Ammonium Soil by Titration	20-Sep-2022	20-Sep-2022	20-Sep-2022
Anions by Kone (soil)	22-Sep-2022	22-Sep-2022	22-Sep-2022
Asbestos ID in Solid Samples	28-Sep-2022		
Chromium III	26-Sep-2022	26-Sep-2022	26-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	22-Sep-2022	22-Sep-2022	22-Sep-2022
Easily Liberated Sulphide	22-Sep-2022	22-Sep-2022	22-Sep-2022
Elemental Sulphur	23-Sep-2022	27-Sep-2022	27-Sep-2022
EPH	27-Sep-2022	27-Sep-2022	28-Sep-2022
EPH by GCxGC-FID	22-Sep-2022	22-Sep-2022	22-Sep-2022
EPH CWG GC (S)			27-Sep-2022
GRO by GC-FID (S)	27-Sep-2022	27-Sep-2022	27-Sep-2022
Hexavalent Chromium (s)	26-Sep-2022	26-Sep-2022	26-Sep-2022
Metals in solid samples by OES	22-Sep-2022	22-Sep-2022	22-Sep-2022
NO3, NO2 and TON by KONE (s)	22-Sep-2022	21-Sep-2022	21-Sep-2022
OC OP Pesticides and Triazine Herb		28-Sep-2022	
PAH by GCMS	21-Sep-2022	23-Sep-2022	23-Sep-2022
pH	23-Sep-2022	23-Sep-2022	23-Sep-2022
Phenols by HPLC (S)	23-Sep-2022	23-Sep-2022	23-Sep-2022
Sample description	17-Sep-2022	17-Sep-2022	17-Sep-2022
Semi Volatile Organic Compounds			21-Sep-2022
Total Organic Carbon	26-Sep-2022	26-Sep-2022	27-Sep-2022
Total Sulphate	21-Sep-2022	21-Sep-2022	22-Sep-2022
TPH CWG GC (S)			28-Sep-2022
VOC MS (S)	28-Sep-2022	27-Sep-2022	28-Sep-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR2297126	Issue Date	: 07-Oct-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 220917-34	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 27-Sep-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 27-Sep-2022 - 07-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

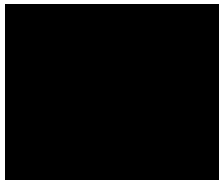
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26893575		----		----	
				Laboratory sample ID		MS-BH19		----		----	
				Client sampling date / time		PR2297126001		----		----	
						17-Sep-2022 11:30		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	92.8	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxylinil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

A "*" symbol preceding any method indicates laboratory or subcontractor non-accredited test. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. In the case when a procedure specified in an accredited method was used for non-accredited matrix, the reported results are non-accredited; please refer to information in General Comment section on the front page. If the report contains subcontracted analyses, those are made in a subcontracted laboratory outside the laboratories ALS Czech Republic, s.r.o.

The calculation methods of summation parameters are available on request in the client service.



CERTIFICATE OF ANALYSIS

SDG: 220917-34
Client Ref: F212561

Report Number: 664022
Location: Keadby 3

Superseded Report: 662862

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	28 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220917-84
Your Reference:	F212561
Location:	Keadby 3
Report No:	662874
Order Number:	386/121917/CP

We received 3 samples on Saturday September 17, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 28, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

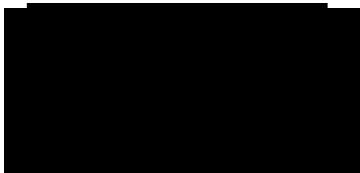
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26894470	MS-BH12	ES1	0.10 - 0.10	14/09/2022
26894480	MS-BH12	ES4	0.50 - 0.50	14/09/2022
26894489	MS-BH12	ES7	1.00 - 1.00	14/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)		26894470	26894480	26894489	
	Customer Sample Reference		MS-BH12	MS-BH12	MS-BH12	
AGS Reference		ES1	ES4	ES7		
Depth (m)		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
Container		60g VOC (ALE215) 1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	60g VOC (ALE215) 250g Amber Jar (ALE210)	60g VOC (ALE215) 250g Amber Jar (ALE215)	
Sample Type		S	S	S	S	
Results Legend <div style="margin-bottom: 10px;"> X Test </div> <div> N No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 2	X	X		
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3		X	X	X
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	
	All	NDPs: 0 Tests: 3	X	X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	26894470	26894480	26894489
Customer Sample Reference	MS-BH12	MS-BH12	MS-BH12
AGS Reference	ES1	ES4	ES7
Depth (m)	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00
Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type	S	S	S

Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	26894470	26894480	26894489
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 3	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26894470	MS-BH12	0.10 - 0.10	Dark Brown	Sandy Loam	Stones	Vegetation
26894480	MS-BH12	0.50 - 0.50	Dark Brown	Sand	Stones	Vegetation
26894489	MS-BH12	1.00 - 1.00	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.		MS-BH12	MS-BH12	MS-BH12		
#	ISO17025 accredited.			F-ALUKUB-CIDB	F-1PUKUB-F1XH	F-CQUKUB-X10Q		
M	mCERTS accredited.			0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
aq	Aqueous / settled sample.	Depth (m)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.flit	Dissolved / filtered sample.	Sample Type		14/09/2022	14/09/2022	14/09/2022		
tot.unflit	Total / unfiltered sample.	Date Sampled		16:46	16:48	16:49		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time		17/09/2022	17/09/2022	17/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received		220917-84	220917-84	220917-84		
	(F) Trigger breach confirmed	SDG Ref		26894470	26894480	26894489		
	1-4*§ Sample deviation (see appendix)	Lab Sample No.(s)		ES1	ES4	ES7		
		AGS Reference						
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	18		26	13		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M	<15	M	<15	M
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	<12	M	<12	M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M	<0.035	M	<0.035	M
Soil Organic Matter (SOM)	<0.35 %	TM132	4.14	#	5.14	#	<0.35	#
pH	1 pH Units	TM133	8.29	M	8.13	M	8.23	M
Sulphur, Elemental	<10 mg/kg	TM136	<10	M	<10	M	<10	M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M	<0.6	M	<0.6	M
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M
Cyanide, Free	<1 mg/kg	TM153	<1	M	<1	M	<1	M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M	<15	@ M	<15	@ M
Chromium, Trivalent	<0.9 mg/kg	TM181	16.4		3.97		5.31	
Arsenic	<0.6 mg/kg	TM181	16.1	M	4.82	M	2.15	M
Boron	<0.7 mg/kg	TM181	22.2	#	9.35	#	2.09	#
Cadmium	<0.02 mg/kg	TM181	0.376	M	0.1	M	0.0316	M
Chromium	<0.9 mg/kg	TM181	16.4	M	3.97	M	5.31	M
Copper	<1.4 mg/kg	TM181	19.2	M	8.66	M	3.45	M
Iron	<1000 mg/kg	TM181	27500	#	8040	#	4660	#
Lead	<0.7 mg/kg	TM181	77.5	M	33.3	M	6.76	M
Mercury	<0.1 mg/kg	TM181	<0.1	M	<0.1	M	<0.1	M
Nickel	<0.2 mg/kg	TM181	26.3	M	7.29	M	7.49	M
Selenium	<1 mg/kg	TM181	1.31	#	<1	#	<1	#
Zinc	<1.9 mg/kg	TM181	104	M	30.3	M	15.4	M
Sulphate, Total	<48 mg/kg	TM221	578	M	661	M	141	M
Total Sulphur (ASB)	<0.0016 %	TM221	0.0193		0.022		0.0047	
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	1.72		0.57		0.1	
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0535	M	0.186	M	0.0596	M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	6.87		22.6		1.77	
EPH (C5-C40)	<35 mg/kg	TM415	<35		64.1		<35	
EPH Surrogate % recovery**	%	TM415	94		87.9		98.7	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Results Legend			Customer Sample Ref.	MS-BH12 F-ALUKUB-CIDB 0.10 - 0.10 Soil/Solid (S) 14/09/2022 16:46 17/09/2022 220917-84 26894470 ES1	MS-BH12 F-1PUKUB-F1XH 0.50 - 0.50 Soil/Solid (S) 14/09/2022 16:48 17/09/2022 220917-84 26894480 ES4	MS-BH12 F-CQKUB-XIQQ 1.00 - 1.00 Soil/Solid (S) 14/09/2022 16:49 17/09/2022 220917-84 26894489 ES7			
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)									
Component	LOD/Units	Method							
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	64.1	<35				
			M	M	M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH12	MS-BH12	MS-BH12		
#	ISO17025 accredited.		F-ALUKUB-CIDB	F-1PUKUB-F1XH	F-CQUKUB-X10Q		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	14/09/2022	14/09/2022	14/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:46	16:48	16:49		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022	17/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-84	220917-84	220917-84		
	(F) Trigger breach confirmed	SDG Ref	26894470	26894480	26894489		
	1-4*§ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	85.6	86.4	86.1		
Acenaphthene-d10 % recovery**	%	TM218	89.5	89.9	88.3		
Phenanthrene-d10 % recovery**	%	TM218	92.4	91.7	91.2		
Chrysene-d12 % recovery**	%	TM218	83.6	80.8	85.9		
Perylene-d12 % recovery**	%	TM218	78.3	81.2	85.5		
Naphthalene	<9 µg/kg	TM218	<9	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	43.6	<15	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	53.4	<17	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	44.9	<15	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	20.5	<14	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	30.4	<10	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	30.8	<15	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	224	<118	<118		



CERTIFICATE OF ANALYSIS

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH12 F-ALUKUB-CIDB 0.10 - 0.10 Soil/Solid (S) 14/09/2022 16:46 17/09/2022 220917-84 26894470 ES1	MS-BH12 F-1PUKUB-F1XH 0.50 - 0.50 Soil/Solid (S) 14/09/2022 16:48 17/09/2022 220917-84 26894480 ES4	MS-BH12 F-CQUKUB-X10Q 1.00 - 1.00 Soil/Solid (S) 14/09/2022 16:49 17/09/2022 220917-84 26894489 ES7			
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)						
diss.filt	Dissolved / filtered sample.	Sample Type						
tot.unfilt	Total / unfiltered sample.	Date Sampled						
	*	Sample Time						
	**	Date Received						
	(F)	SDG Ref						
	1-4*5@	Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	128	124	112			
Toluene-d8**	%	TM116	102	102	98.9			
4-Bromofluorobenzene**	%	TM116	95.6	95.6	91.1			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<200	<10			
			M	M	M			
Benzene	<9 µg/kg	TM116	<90	<180	<9			
			M	M	M			
Toluene	<7 µg/kg	TM116	<70	<140	<7			
			M	M	M			
Ethylbenzene	<4 µg/kg	TM116	<40	<80	<4			
			M	M	M			
p/m-Xylene	<10 µg/kg	TM116	<100	<200	<10			
			#	#	#			
o-Xylene	<10 µg/kg	TM116	<100	<200	<10			
			M	M	M			
Sum of BTEX	<40 µg/kg	TM116	<400	<800	<40			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH12ES1 0.10 - 0.10 SOLID 14/09/2022 00:00:00 17/09/2022 05:00:00 220917-84 26894470 TM048	28/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH12ES4 0.50 - 0.50 SOLID 14/09/2022 00:00:00 17/09/2022 05:00:00 220917-84 26894480 TM048	28/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-84
Client Ref.: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26894470	26894480	26894489
Customer Sample Ref.	MS-BH12	MS-BH12	MS-BH12
AGS Ref.	ES1	ES4	ES7
Depth	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

	26894470	26894480	26894489
Ammonium Soil by Titration	27-Sep-2022	20-Sep-2022	20-Sep-2022
Anions by Kone (soil)	22-Sep-2022	22-Sep-2022	22-Sep-2022
Asbestos ID in Solid Samples	28-Sep-2022	28-Sep-2022	
Chromium III	26-Sep-2022	26-Sep-2022	26-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	22-Sep-2022	22-Sep-2022	22-Sep-2022
Easily Liberated Sulphide	22-Sep-2022	22-Sep-2022	22-Sep-2022
Elemental Sulphur	23-Sep-2022	27-Sep-2022	23-Sep-2022
EPH	24-Sep-2022	27-Sep-2022	22-Sep-2022
EPH by GCxGC-FID	22-Sep-2022	22-Sep-2022	22-Sep-2022
GRO by GC-FID (S)	22-Sep-2022	27-Sep-2022	21-Sep-2022
Hexavalent Chromium (s)	26-Sep-2022	26-Sep-2022	26-Sep-2022
Metals in solid samples by OES	22-Sep-2022	22-Sep-2022	22-Sep-2022
NO3, NO2 and TON by KONE (s)	21-Sep-2022	21-Sep-2022	21-Sep-2022
PAH by GCMS	23-Sep-2022	21-Sep-2022	23-Sep-2022
pH	23-Sep-2022	23-Sep-2022	22-Sep-2022
Phenols by HPLC (S)	23-Sep-2022	23-Sep-2022	23-Sep-2022
Sample description	18-Sep-2022	18-Sep-2022	18-Sep-2022
Total Organic Carbon	27-Sep-2022	27-Sep-2022	27-Sep-2022
Total Sulphate	21-Sep-2022	21-Sep-2022	22-Sep-2022
VOC MS (S)	22-Sep-2022	22-Sep-2022	22-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220917-84
Client Ref: F212561

Report Number: 662874
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	28 September 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220917-85
Your Reference:	F212561
Location:	Keadby 3
Report No:	662876
Order Number:	386/121917/CP

We received 4 samples on Saturday September 17, 2022 and 4 of these samples were scheduled for analysis which was completed on Wednesday September 28, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

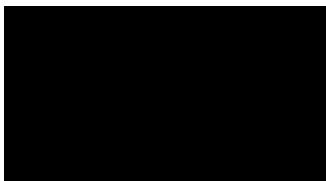
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26894511	MS-BH04	ES1	0.10 - 0.10	13/09/2022
26894525	MS-BH04	ES4	0.50 - 0.50	14/09/2022
26894532	MS-BH04	ES7	0.80 - 0.80	14/09/2022
26894518	MS-BH04	ES10	1.20 - 1.20	14/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type
	X Test	N No Determination Possible	26894511	26894525	MS-BH04	MS-BH04	ES1	ES4	ES7	ES10	S
<p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>											
Ammonium Soil by Titration	All	NDPs: 0 Tests: 4	X	X	X	X					
Anions by Kone (soil)	All	NDPs: 0 Tests: 4	X	X	X	X					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 4	X	X	X	X					
Chromium III	All	NDPs: 0 Tests: 4	X	X	X	X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4	X	X	X	X					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 4	X	X	X	X					
Elemental Sulphur	All	NDPs: 0 Tests: 4	X	X	X	X					
EPH	All	NDPs: 0 Tests: 4	X	X	X	X					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 4	X	X	X	X					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1				X					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4		X	X	X				X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 4	X	X	X	X					
Metals in solid samples by OES	All	NDPs: 0 Tests: 4	X	X	X	X					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 4	X	X	X	X					
PAH by GCMS	All	NDPs: 0 Tests: 4	X	X	X	X					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
26894511	MS-BH04	ES1	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
26894525	MS-BH04	ES4	0.50 - 0.50	250g Amber Jar (ALE210)	S
26894532	MS-BH04	ES7	0.80 - 0.80	1kg TUB with Handle (ALE260)	S
26894518	MS-BH04	ES10	1.20 - 1.20	60g VOC (ALE215)	S

Parameter	All	NDPs: 0 Tests: 4	26894511	26894525	26894532	26894518
pH	All	NDPs: 0 Tests: 4	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 4	X	X	X	X
Sample description	All	NDPs: 0 Tests: 4	X	X	X	X
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1			X	
Total Organic Carbon	All	NDPs: 0 Tests: 4	X	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 4	X	X	X	X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
VOC MS (S)	All	NDPs: 0 Tests: 4		X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26894511	MS-BH04	0.10 - 0.10	Dark Brown	Sand	Stones	Vegetation
26894518	MS-BH04	1.20 - 1.20	Dark Brown	Sand	Vegetation	Stones
26894525	MS-BH04	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Vegetation
26894532	MS-BH04	0.80 - 0.80	Dark Brown	Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH04	MS-BH04	MS-BH04	MS-BH04	
#	ISO17025 accredited.		F-VV2JUB-9YLU	F-X1AKUB-NGFZ	F-GDAKUB-ZGPV	F-GIAKUB-KA4Q	
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
diss.fltr	Dissolved / filtered sample.	Sample Type	13/09/2022	14/09/2022	14/09/2022	14/09/2022	
tot.unfltr	Total / unfiltered sample.	Date Sampled	17:50	09:22	09:29	09:32	
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022	17/09/2022	17/09/2022	
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-85	220917-85	220917-85	220917-85	
	(F) Trigger breach confirmed	SDG Ref	26894511	26894525	26894532	26894518	
	1-4*% Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7	ES10	
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	14	20	53	20	
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M	<15 M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M	<12 M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M	<0.035 M	
Soil Organic Matter (SOM)	<0.35 %	TM132	3.36 #	1.98 #	76.2 #	1.88 #	
pH	1 pH Units	TM133	8.32 M	8.39 M	7.5 M	7.39 M	
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M	<10 M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M	<0.6 M	
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M	<15 @ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	13.9	18.2	7.29	7.07	
Arsenic	<0.6 mg/kg	TM181	16.7 M	15.4 M	6.01 M	0.975 M	
Boron	<0.7 mg/kg	TM181	15.4 #	15.8 #	13.5 #	2.53 #	
Cadmium	<0.02 mg/kg	TM181	0.297 M	0.184 M	0.201 M	0.0293 M	
Chromium	<0.9 mg/kg	TM181	13.9 M	18.2 M	7.29 M	7.07 M	
Copper	<1.4 mg/kg	TM181	23.7 M	19.2 M	11.4 M	3.56 M	
Iron	<1000 mg/kg	TM181	35300 #	33800 #	14300 #	2630 #	
Lead	<0.7 mg/kg	TM181	79.9 M	80.6 M	29.8 M	5.77 M	
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<0.1 M	
Nickel	<0.2 mg/kg	TM181	30.9 M	31.3 M	15.4 M	4.86 M	
Selenium	<1 mg/kg	TM181	1.32 #	1.33 #	<1 #	<1 #	
Zinc	<1.9 mg/kg	TM181	108 M	111 M	42.5 M	7.93 M	
Sulphate, Total	<48 mg/kg	TM221	293 M	301 M	797 M	130 M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.00978	0.01	0.0266	0.00434	
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.6	0.36	0.35	<0.1	
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0265 M	0.0471 M	0.0831 M	<0.004 M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	8.43	3.87	25.4	2.9	
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	216	62.6	
EPH Surrogate % recovery**	%	TM415	96.9	96.1	82.3	97.9	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH04	MS-BH04	MS-BH04	MS-BH04		
#	ISO17025 accredited.		F-VV2JUB-9YLU	F-X1AKUB-NGFZ	F-GDAKUB-ZGPV	F-GIAKUB-KA4Q		
M	mCERTS accredited.	Depth (m)	0.10 - 0.10	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20		
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Date Sampled	13/09/2022	14/09/2022	14/09/2022	14/09/2022		
tot.unfilt	Total / unfiltered sample.	Sample Time	17:50	09:22	09:29	09:32		
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Received	17/09/2022	17/09/2022	17/09/2022	17/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	220917-85	220917-85	220917-85	220917-85		
	(F) Trigger breach confirmed	Lab Sample No.(s)	26894511	26894525	26894532	26894518		
	1-4*§@ Sample deviation (see appendix)	AGS Reference	ES1	ES4	ES7	ES10		
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	87.9	82.8	85.1	84.7		
Acenaphthene-d10 % recovery**	%	TM218	87.1	88.2	86.5	88		
Phenanthrene-d10 % recovery**	%	TM218	87.2	90.4	89.8	91.1		
Chrysene-d12 % recovery**	%	TM218	77.7	79.2	80.1	83.1		
Perylene-d12 % recovery**	%	TM218	78.9	74.2	71.3	80.1		
Naphthalene	<9 µg/kg	TM218	<9	<9	<9	<9		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12	<12		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8	<8		
Fluorene	<10 µg/kg	TM218	<10	<10	<10	<10		
Phenanthrene	<15 µg/kg	TM218	59.4	24.2	<15	<15		
Anthracene	<16 µg/kg	TM218	<16	<16	<16	<16		
Fluoranthene	<17 µg/kg	TM218	78.9	<17	<17	<17		
Pyrene	<15 µg/kg	TM218	69.2	<15	<15	<15		
Benz(a)anthracene	<14 µg/kg	TM218	32.3	<14	<14	<14		
Chrysene	<10 µg/kg	TM218	44.1	<10	<10	<10		
Benzo(b)fluoranthene	<15 µg/kg	TM218	55.1	<15	<15	<15		
Benzo(k)fluoranthene	<14 µg/kg	TM218	17.2	<14	<14	<14		
Benzo(a)pyrene	<15 µg/kg	TM218	33	<15	<15	<15		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	27	<18	<18	<18		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23	<23		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	32.6	<24	<24	<24		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	449	<118	<118	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH04			
#	ISO17025 accredited.		F-GDAKUB-ZGPV			
M	mCERTS accredited.		0.80 - 0.80			
aq	Aqueous / settled sample.		Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.		14/09/2022			
tot.unfilt	Total / unfiltered sample.		09-29			
	* Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	17/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	220917-85			
(F)	Trigger breach confirmed	Date Sampled	26894532			
1-4*\$@	Sample deviation (see appendix)	Sample Time	ES7			
		Date Received				
		SDG Ref				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<200			
Pentachlorophenol	<100 µg/kg	TM157	<200			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<200			
Nitrobenzene	<100 µg/kg	TM157	<200			
Isophorone	<100 µg/kg	TM157	<200			
Hexachloroethane	<100 µg/kg	TM157	<200			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<200			
Hexachlorobutadiene	<100 µg/kg	TM157	<200			
Hexachlorobenzene	<100 µg/kg	TM157	<200			
n-Dioctyl phthalate	<100 µg/kg	TM157	<200			
Dimethyl phthalate	<100 µg/kg	TM157	<200			
Diethyl phthalate	<100 µg/kg	TM157	<200			
n-Dibutyl phthalate	<100 µg/kg	TM157	<200			
Dibenzofuran	<100 µg/kg	TM157	<200			
Carbazole	<100 µg/kg	TM157	<200			
Butylbenzyl phthalate	<100 µg/kg	TM157	<200			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<200			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<200			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<200			
Azobenzene	<100 µg/kg	TM157	<200			
4-Nitrophenol	<100 µg/kg	TM157	<200			
4-Nitroaniline	<100 µg/kg	TM157	<200			
4-Methylphenol	<100 µg/kg	TM157	<200			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<200			
4-Chloroaniline	<100 µg/kg	TM157	<200			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<200			
4-Bromophenylphenylether	<100 µg/kg	TM157	<200			
3-Nitroaniline	<100 µg/kg	TM157	<200			
2-Nitrophenol	<100 µg/kg	TM157	<200			
2-Nitroaniline	<100 µg/kg	TM157	<200			
2-Methylphenol	<100 µg/kg	TM157	<200			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<200			
2-Chlorophenol	<100 µg/kg	TM157	<200			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH04 F-GDAKUB-ZGPV 0.80 - 0.80 Soil/Solid (S) 14/09/2022 09:29 17/09/2022 220917-85 26894532 ES7				
Component	LOD/Units	Method	AGS Reference				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<200				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<200				
2,4-Dimethylphenol	<100 µg/kg	TM157	<200				
2,4-Dichlorophenol	<100 µg/kg	TM157	<200				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<200				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<200				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<200				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<200				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<200				
2-Chloronaphthalene	<100 µg/kg	TM157	<200				
2-Methylnaphthalene	<100 µg/kg	TM157	<200				
Acenaphthylene	<100 µg/kg	TM157	<200				
Acenaphthene	<100 µg/kg	TM157	<200				
Anthracene	<100 µg/kg	TM157	<200				
Benzo(a)anthracene	<100 µg/kg	TM157	<200				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<200				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<200				
Benzo(a)pyrene	<100 µg/kg	TM157	<200				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<200				
Chrysene	<100 µg/kg	TM157	<200				
Fluoranthene	<100 µg/kg	TM157	<200				
Fluorene	<100 µg/kg	TM157	<200				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<200				
Phenanthrene	<100 µg/kg	TM157	<200				
Pyrene	<100 µg/kg	TM157	<200				
Naphthalene	<100 µg/kg	TM157	<200				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<200				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<200				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.									
#	ISO17025 accredited.	MS-BH04 F-GDAKUB-ZGPV 0.80 - 0.80 Soil/Solid (S) 14/09/2022 09:29 17/09/2022 220917-85 26894532 ES7	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference								
M	mCERTS accredited.										
aq	Aqueous / settled sample.										
diss.filt	Dissolved / filtered sample.										
tot.unfilt	Total / unfiltered sample.										
*	Subcontracted - refer to subcontractor report for accreditation status.										
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery										
(F)	Trigger breach confirmed										
1-4*§	Sample deviation (see appendix)										
Component	LOD/Units			Method							
GRO Surrogate % recovery**	%	TM089	39.8	4							
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	4							
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	4							
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	4							
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#							
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#							
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	12200	#							
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	129000	#							
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	70200								
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	211000								
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	422000								
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	4							
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	4							
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	4							
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#							
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#							
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	11200	#							
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	130000	#							
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	68800								
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	9260								
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	211000								
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	422000								
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	4							
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	4							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	4							



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH04	MS-BH04	MS-BH04	MS-BH04	
#	ISO17025 accredited.		F-VV2JUB-9YLU	F-X1AKUB-NGFZ	F-GDAKUB-ZGPV	F-GIAKUB-KA4Q	
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	0.80 - 0.80	1.20 - 1.20	
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
diss.filt	Dissolved / filtered sample.	Sample Type	13/09/2022	14/09/2022	14/09/2022	14/09/2022	
tot.unfilt	Total / unfiltered sample.	Date Sampled	17:50	09:22	09:29	09:32	
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022	17/09/2022	17/09/2022	
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220917-85	220917-85	220917-85	220917-85	
(F)	Trigger breach confirmed	SDG Ref	26894511	26894525	26894532	26894518	
1-4*#	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7	ES10	
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	126	111	131	108	
Toluene-d8**	%	TM116	102	92	95.4	92.6	
4-Bromofluorobenzene**	%	TM116	98.7	70.1	80.5	70.8	
Dichlorodifluoromethane	<6 µg/kg	TM116			<120		#
Chloromethane	<7 µg/kg	TM116			<140		#
Vinyl Chloride	<6 µg/kg	TM116			<120		@ M
Bromomethane	<10 µg/kg	TM116			<200		M
Chloroethane	<10 µg/kg	TM116			<200		M
Trichlorofluoromethane	<6 µg/kg	TM116			<120		M
1,1-Dichloroethene	<10 µg/kg	TM116			<200		#
Carbon Disulphide	<7 µg/kg	TM116			<140		M
Dichloromethane	<10 µg/kg	TM116			991		#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<10	<200	<10	M M
trans-1,2-Dichloroethene	<10 µg/kg	TM116			<200		M
1,1-Dichloroethane	<8 µg/kg	TM116			<160		M
cis-1,2-Dichloroethene	<6 µg/kg	TM116			<120		M
2,2-Dichloropropane	<10 µg/kg	TM116			<200		
Bromochloromethane	<10 µg/kg	TM116			<200		M
Chloroform	<8 µg/kg	TM116			<160		M
1,1,1-Trichloroethane	<7 µg/kg	TM116			<140		M
1,1-Dichloropropene	<10 µg/kg	TM116			<200		M
Carbon tetrachloride	<10 µg/kg	TM116			<200		M
1,2-Dichloroethane	<5 µg/kg	TM116			<100		M
Benzene	<9 µg/kg	TM116	<90	<9	<180	<9	M M
Trichloroethene	<9 µg/kg	TM116			<180		#
1,2-Dichloropropane	<10 µg/kg	TM116			<200		M
Dibromomethane	<9 µg/kg	TM116			<180		M
Bromodichloromethane	<7 µg/kg	TM116			<140		M
cis-1,3-Dichloropropene	<10 µg/kg	TM116			<200		M
Toluene	<7 µg/kg	TM116	<70	<7	<140	<7	M M
trans-1,3-Dichloropropene	<10 µg/kg	TM116			<200		
1,1,2-Trichloroethane	<10 µg/kg	TM116			<200		M
1,3-Dichloropropane	<7 µg/kg	TM116			<140		M



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH04 F-VV2JUB-9YLU 0.10 - 0.10 Soil/Solid (S) 13/09/2022 17:50 17/09/2022 220917-85 26894511 ES1	MS-BH04 F-X1AKUB-NGFZ 0.50 - 0.50 Soil/Solid (S) 14/09/2022 09:22 17/09/2022 220917-85 26894525 ES4	MS-BH04 F-GDAKUB-ZGPV 0.80 - 0.80 Soil/Solid (S) 14/09/2022 09:29 17/09/2022 220917-85 26894532 ES7	MS-BH04 F-GIAKUB-KA4Q 1.20 - 1.20 Soil/Solid (S) 14/09/2022 09:32 17/09/2022 220917-85 26894518 ES10
Component	LOD/Units	Method				
Tetrachloroethene	<5 µg/kg	TM116			<100	M
Dibromochloromethane	<10 µg/kg	TM116			<200	M
1,2-Dibromoethane	<10 µg/kg	TM116			<200	M
Chlorobenzene	<5 µg/kg	TM116			<100	M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116			<200	M
Ethylbenzene	<4 µg/kg	TM116	<40 M	<4 M	<80 M	<4 M
p/m-Xylene	<10 µg/kg	TM116	<100 #	<10 #	<200 #	<10 #
o-Xylene	<10 µg/kg	TM116	<100 M	<10 M	<200 M	<10 M
Styrene	<10 µg/kg	TM116			<200 @ #	
Bromoform	<10 µg/kg	TM116			<200 M	
Isopropylbenzene	<5 µg/kg	TM116			<100 #	
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116			<200 #	
1,2,3-Trichloropropane	<16 µg/kg	TM116			<320 M	
Bromobenzene	<10 µg/kg	TM116			<200 M	
Propylbenzene	<10 µg/kg	TM116			<200 M	
2-Chlorotoluene	<9 µg/kg	TM116			<180 M	
1,3,5-Trimethylbenzene	<8 µg/kg	TM116			<160 M	
4-Chlorotoluene	<10 µg/kg	TM116			<200 M	
tert-Butylbenzene	<14 µg/kg	TM116			<280 #	
1,2,4-Trimethylbenzene	<9 µg/kg	TM116			<180 #	
sec-Butylbenzene	<10 µg/kg	TM116			<200	
4-Isopropyltoluene	<10 µg/kg	TM116			<200	
1,3-Dichlorobenzene	<8 µg/kg	TM116			<160 M	
1,4-Dichlorobenzene	<5 µg/kg	TM116			<100 M	
n-Butylbenzene	<11 µg/kg	TM116			<220	
1,2-Dichlorobenzene	<10 µg/kg	TM116			<200 M	
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116			<280 M	
Tert-amyl methyl ether	<10 µg/kg	TM116			<200 #	
1,2,4-Trichlorobenzene	<20 µg/kg	TM116			<400	
Hexachlorobutadiene	<20 µg/kg	TM116			<400	
Naphthalene	<13 µg/kg	TM116			<260 M	
1,2,3-Trichlorobenzene	<20 µg/kg	TM116			<400 #	
1,3,5-Trichlorobenzene	<20 µg/kg	TM116			<400	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

VOC MS (S)

Table with columns for Results Legend, Customer Sample Ref., MS-BH04, MS-BH04, MS-BH04, MS-BH04, and Component. Includes rows for Sum of Detected Xylenes and Sum of BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH04ES1 0.10 - 0.10 SOLID 13/09/2022 00:00:00 17/09/2022 05:00:00 220917-85 26894511 TM048	27/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH04ES4 0.50 - 0.50 SOLID 14/09/2022 00:00:00 17/09/2022 05:00:00 220917-85 26894525 TM048	27/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH04ES7 0.80 - 0.80 SOLID 14/09/2022 00:00:00 17/09/2022 05:00:00 220917-85 26894532 TM048	28/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH04ES10 1.20 - 1.20 SOLID 14/09/2022 00:00:00 17/09/2022 05:00:00 220917-85 26894518 TM048	27/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220917-85
Client Ref.: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26894511	26894518	26894525	26894532
Customer Sample Ref.	MS-BH04	MS-BH04	MS-BH04	MS-BH04
AGS Ref.	ES1	ES10	ES4	ES7
Depth	0.10 - 0.10	1.20 - 1.20	0.50 - 0.50	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	20-Sep-2022	20-Sep-2022	20-Sep-2022	20-Sep-2022
Anions by Kone (soil)	22-Sep-2022	22-Sep-2022	22-Sep-2022	22-Sep-2022
Asbestos ID in Solid Samples	27-Sep-2022	28-Sep-2022	28-Sep-2022	28-Sep-2022
Chromium III	26-Sep-2022	26-Sep-2022	26-Sep-2022	26-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	22-Sep-2022	22-Sep-2022	22-Sep-2022	22-Sep-2022
Easily Liberated Sulphide	22-Sep-2022	22-Sep-2022	22-Sep-2022	22-Sep-2022
Elemental Sulphur	27-Sep-2022	27-Sep-2022	27-Sep-2022	27-Sep-2022
EPH	24-Sep-2022	24-Sep-2022	24-Sep-2022	27-Sep-2022
EPH by GCxGC-FID	22-Sep-2022	22-Sep-2022	22-Sep-2022	22-Sep-2022
EPH CWG GC (S)				21-Sep-2022
GRO by GC-FID (S)	22-Sep-2022	22-Sep-2022	22-Sep-2022	27-Sep-2022
Hexavalent Chromium (s)	26-Sep-2022	26-Sep-2022	26-Sep-2022	26-Sep-2022
Metals in solid samples by OES	22-Sep-2022	22-Sep-2022	22-Sep-2022	23-Sep-2022
NO3, NO2 and TON by KONE (s)	22-Sep-2022	21-Sep-2022	22-Sep-2022	21-Sep-2022
PAH by GCMS	21-Sep-2022	23-Sep-2022	23-Sep-2022	23-Sep-2022
pH	23-Sep-2022	23-Sep-2022	23-Sep-2022	23-Sep-2022
Phenols by HPLC (S)	22-Sep-2022	22-Sep-2022	22-Sep-2022	23-Sep-2022
Sample description	18-Sep-2022	18-Sep-2022	18-Sep-2022	18-Sep-2022
Semi Volatile Organic Compounds				21-Sep-2022
Total Organic Carbon	26-Sep-2022	26-Sep-2022	26-Sep-2022	28-Sep-2022
Total Sulphate	21-Sep-2022	21-Sep-2022	21-Sep-2022	21-Sep-2022
TPH CWG GC (S)				27-Sep-2022
VOC MS (S)	22-Sep-2022	22-Sep-2022	22-Sep-2022	22-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220917-85
Client Ref: F212561

Report Number: 662876
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	04 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220924-22
Your Reference:	F212561
Location:	Keadby 3
Report No:	663458
Order Number:	386/121917/CP

We received 5 samples on Friday September 23, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday October 04, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

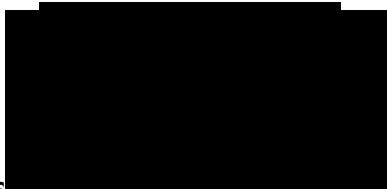
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



S
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26918360	MS-BH17	ES7	1.00 - 1.00	15/09/2022
26918332	MS-BH17	ES10	1.80 - 1.80	15/09/2022
26918339	MS-BH17	ES14	2.80 - 2.80	15/09/2022
26918346	MS-BH17	ES18	3.80 - 3.80	15/09/2022
26918353	MS-BH17	ES22	4.70 - 4.80	15/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> Test</div> <div style="display: flex; align-items: center;"> No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26918360	MS-BH17	ES7	1.00 - 1.00	1kg TUB with Handle (ALE260)	S
		26918332	MS-BH17	ES10	1.80 - 1.80	250g Amber Jar (ALE210)	S
		26918339	MS-BH17	ES14	2.80 - 2.80	60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					
pH	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	26918360	MS-BH17	ES7	1.00 - 1.00				S
	26918332	MS-BH17	ES10	1.80 - 1.80				S
	26918339	MS-BH17	ES14	2.80 - 2.80				S
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3			X	X	X	
Sample description	All	NDPs: 0 Tests: 3			X	X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 3			X	X	X	
Total Sulphate	All	NDPs: 0 Tests: 3			X	X	X	
VOC MS (S)	All	NDPs: 0 Tests: 3			X	X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26918332	MS-BH17	1.80 - 1.80	Dark Brown	Sandy Loam	Vegetation	None
26918339	MS-BH17	2.80 - 2.80	Light Brown	Silty Sand	Stones	None
26918360	MS-BH17	1.00 - 1.00	Light Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH17	MS-BH17		
#	ISO17025 accredited.		F-81LMUB-PD74	F-LWRMUB-SKH0	F-RXRUMUB-P9TK		
M	mCERTS accredited.		1.00 - 1.00	1.80 - 1.80	2.80 - 2.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.flit	Dissolved / filtered sample.	Sample Type	15/09/2022	15/09/2022	15/09/2022		
tot.unflit	Total / unfiltered sample.	Date Sampled	15:15	17:43	17:44		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	23/09/2022	23/09/2022	23/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220924-22	220924-22	220924-22		
	(F) Trigger breach confirmed	SDG Ref	26918360	26918332	26918339		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES7	ES10	ES14		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	10	18	16		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132	0.36 #	<0.35 #	0.428 #		
pH	1 pH Units	TM133	8.85 M	8.88 M	8.08 M		
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M		
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	6.48 M	4.28 M	7.55 M		
Arsenic	<0.6 mg/kg	TM181	2.92 M	1.63 M	3.28 M		
Boron	<0.7 mg/kg	TM181	4.59 #	0.996 #	7.24 #		
Cadmium	<0.02 mg/kg	TM181	1.48 M	0.07 M	0.0741 M		
Chromium	<0.9 mg/kg	TM181	6.48 M	4.28 M	7.55 M		
Copper	<1.4 mg/kg	TM181	20.3 M	4.29 M	6.76 M		
Iron	<1000 mg/kg	TM181	5940 #	3300 #	7900 #		
Lead	<0.7 mg/kg	TM181	69.7 M	4.11 M	5.8 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	8.38 M	4.81 M	9.85 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	1.01 #		
Zinc	<1.9 mg/kg	TM181	45.4 M	11.8 M	23.2 M		
Sulphate, Total	<48 mg/kg	TM221	742 M	<48 M	2130 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0247	<0.0016	0.0711		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.12	<0.1	1.48		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.142 M	0.0421 M	0.072 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	10.8	<1	<1		
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	<35		
EPH Surrogate % recovery**	%	TM415	104	103	102		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Results Legend			Customer Sample Ref.							
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filter Dissolved / filtered sample. tot.unfiltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)			MS-BH17 F-81LMUB-PD74 1.00 - 1.00 Soil/Solid (S) 15/09/2022 15:15 23/09/2022 220924-22 26918360 ES7	MS-BH17 F-LWRMUB-SKH0 1.80 - 1.80 Soil/Solid (S) 15/09/2022 17:43 23/09/2022 220924-22 26918332 ES10	MS-BH17 F-RXRMB-P9TK 2.80 - 2.80 Soil/Solid (S) 15/09/2022 17:44 23/09/2022 220924-22 26918339 ES14					
Component	LOD/Units	Method								
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35		<35		<35			
			M		M		M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

GRO by GC-FID (S)

#	Customer Sample Ref.		MS-BH17	MS-BH17	MS-BH17
	Depth (m)	Sample Type	F-81LMUB-PD74	F-LWRMUB-SKH0	F-RXRMUB-P9TK
M			1.00 - 1.00 Soil/Solid (S)	1.80 - 1.80 Soil/Solid (S)	2.80 - 2.80 Soil/Solid (S)
aq			15/09/2022 15:15	15/09/2022 17:43	15/09/2022 17:44
tot.unfilt			23/09/2022	23/09/2022	23/09/2022
*			220924-22	220924-22	220924-22
**			26918360	26918332	26918339
			ES7	ES10	ES14

Component	LOD/Units	Method			
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20 @	<20 @	<20 @



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH17	MS-BH17		
#	ISO17025 accredited.		F-81LMUB-PD74	F-LWRMUB-SKH0	F-RXRMBUB-P9TK		
M	mCERTS accredited.		1.00 - 1.00	1.80 - 1.80	2.80 - 2.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	15/09/2022	15/09/2022	15/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:15	17:43	17:44		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	23/09/2022	23/09/2022	23/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220924-22	220924-22	220924-22		
	(F) Trigger breach confirmed	SDG Ref	26918360	26918332	26918339		
	1-4*§ Sample deviation (see appendix)	Lab Sample No.(s)	ES7	ES10	ES14		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	89.2	87.3	88		
Acenaphthene-d10 % recovery**	%	TM218	92.3	90.9	91.5		
Phenanthrene-d10 % recovery**	%	TM218	96.1	93.4	93.9		
Chrysene-d12 % recovery**	%	TM218	92.2	86.1	86.5		
Perylene-d12 % recovery**	%	TM218	87.4	80.2	81.5		
Naphthalene	<9 µg/kg	TM218	<9	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	15.9	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	13.3	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	16.5	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	135	115	28.6		
			M	M	M		
Anthracene	<16 µg/kg	TM218	44.6	21	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	213	97.5	36		
			M	M	M		
Pyrene	<15 µg/kg	TM218	180	79.1	34.1		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	97.2	36.4	17.5		
			M	M	M		
Chrysene	<10 µg/kg	TM218	86	29.2	16.4		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	81.1	26.9	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	39.6	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	68.4	22.1	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	42.5	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	38.3	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1060	441	133		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22

Report Number: 663458

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH17	MS-BH17			
#	ISO17025 accredited.		F-81LMUB-PD74	F-LWRMUB-SKH0	F-RXRMB-P9TK			
M	mCERTS accredited.		1.00 - 1.00	1.80 - 1.80	2.80 - 2.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	15/09/2022	15/09/2022	15/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:15	17:43	17:44			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	23/09/2022	23/09/2022	23/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220924-22	220924-22	220924-22			
(F)	Trigger breach confirmed	SDG Ref	26918360	26918332	26918339			
1-4*#	@ Sample deviation (see appendix)	Lab Sample No.(s)	ES7	ES10	ES14			
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	110 @	110 @	107 @			
Toluene-d8**	%	TM116	98.4 @	97.6 @	98.1 @			
4-Bromofluorobenzene**	%	TM116	93.7 @	88.8 @	92.3 @			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 @ M	<10 @ M	<100 @ M			
Benzene	<9 µg/kg	TM116	<9 @ M	<9 @ M	<90 @ M			
Toluene	<7 µg/kg	TM116	<7 @ M	<7 @ M	<70 @ M			
Ethylbenzene	<4 µg/kg	TM116	<4 @ M	<4 @ M	<40 @ M			
p/m-Xylene	<10 µg/kg	TM116	<10 @ #	<10 @ #	<100 @ #			
o-Xylene	<10 µg/kg	TM116	<10 @ M	<10 @ M	<100 @ M			
Sum of BTEX	<40 µg/kg	TM116	<40 @	<40 @	<400 @			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH17ES7 1.00 - 1.00 SOLID 15/09/2022 00:00:00 23/09/2022 05:00:00 220924-22 26918360 TM048	30/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH17ES10 1.80 - 1.80 SOLID 15/09/2022 00:00:00 23/09/2022 05:00:00 220924-22 26918332 TM048	30/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

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Client Ref.: F212561

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Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-22
Client Ref.: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26918332	26918339	26918360
Customer Sample Ref.	MS-BH17	MS-BH17	MS-BH17
AGS Ref.	ES10	ES14	ES7
Depth	1.80 - 1.80	2.80 - 2.80	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

	26918332	26918339	26918360
Ammonium Soil by Titration	27-Sep-2022	03-Oct-2022	27-Sep-2022
Anions by Kone (soil)	28-Sep-2022	03-Oct-2022	28-Sep-2022
Asbestos ID in Solid Samples	30-Sep-2022		30-Sep-2022
Chromium III	28-Sep-2022	04-Oct-2022	28-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	28-Sep-2022	28-Sep-2022	28-Sep-2022
Easily Liberated Sulphide	28-Sep-2022	28-Sep-2022	28-Sep-2022
Elemental Sulphur	30-Sep-2022	30-Sep-2022	30-Sep-2022
EPH	30-Sep-2022	30-Sep-2022	30-Sep-2022
EPH by GCxGC-FID	29-Sep-2022	29-Sep-2022	29-Sep-2022
GRO by GC-FID (S)	30-Sep-2022	30-Sep-2022	30-Sep-2022
Hexavalent Chromium (s)	27-Sep-2022	04-Oct-2022	27-Sep-2022
Metals in solid samples by OES	29-Sep-2022	29-Sep-2022	29-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022	04-Oct-2022	04-Oct-2022
PAH by GCMS	28-Sep-2022	28-Sep-2022	28-Sep-2022
pH	27-Sep-2022	26-Sep-2022	27-Sep-2022
Phenols by HPLC (S)	28-Sep-2022	29-Sep-2022	28-Sep-2022
Sample description	26-Sep-2022	26-Sep-2022	26-Sep-2022
Total Organic Carbon	29-Sep-2022	30-Sep-2022	29-Sep-2022
Total Sulphate	28-Sep-2022	29-Sep-2022	28-Sep-2022
VOC MS (S)	30-Sep-2022	30-Sep-2022	30-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220924-22
Client Ref: F212561

Report Number: 663458
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 25 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220924-23
Your Reference: F212561
Location: Keadby 3
Report No: 665877
Order Number: 386/121917/CP

This report has been revised and directly supersedes 663461 in its entirety.

We received 4 samples on Saturday September 17, 2022 and 4 of these samples were scheduled for analysis which was completed on Tuesday October 25, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

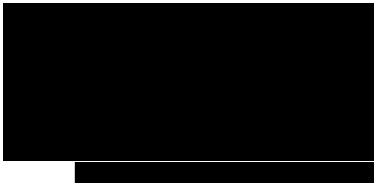
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26918367	MS-BH09	ES1	0.10 - 0.10	15/09/2022
26918374	MS-BH09	ES4	0.50 - 0.50	15/09/2022
26918381	MS-BH09	ES7	1.00 - 1.00	15/09/2022
26918388	MS-BH09	ES9	1.20 - 1.20	15/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container					Sample Type
				60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	
26918388	MS-BH09	ES9	1.20 - 1.20	S	S	S	S	S	S
26918381	MS-BH09	ES7	1.00 - 1.00	S	S	S	S	S	S
26918374	MS-BH09	ES4	0.50 - 0.50	S	S	S	S	S	S
26918367	MS-BH09	ES1	0.10 - 0.10	S	S	S	S	S	S

Parameter	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	Test Results
Acid herbicides*	All	NDPs: 0 Tests: 1				S	X
Ammonium Low	All	NDPs: 0 Tests: 1				S	X
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3				S	X, X, X
Anions by Kone (soil)	All	NDPs: 0 Tests: 3				S	X, X, X
Anions by Kone (w)	All	NDPs: 0 Tests: 1				S	X
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3				S	X, X, X
CEN Readings	All	NDPs: 0 Tests: 1				S	X
Chromium III	All	NDPs: 0 Tests: 4				S	X, X, X, X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3				S	X, X, X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1				S	X
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3				S	X, X, X
Elemental Sulphur	All	NDPs: 0 Tests: 3				S	X, X, X
EPH	All	NDPs: 0 Tests: 3				S	X, X, X
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3				S	X, X, X
EPH CWG GC (S)	All	NDPs: 0 Tests: 1				S	X



CERTIFICATE OF ANALYSIS

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SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

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Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container				Sample Type
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	
	26918367	MS-BH09	ES1	0.10 - 0.10					S
	26918374	MS-BH09	ES4	0.50 - 0.50					S
	26918381	MS-BH09	ES7	1.00 - 1.00					S
	26918388	MS-BH09	ES9	1.20 - 1.20					S
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4			X		X	X	X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3			X		X		X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1						X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1						X	
Mercury Dissolved	All	NDPs: 0 Tests: 1						X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 3			X		X		X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1						X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3			X		X		X
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1			X				
PAH by GCMS	All	NDPs: 0 Tests: 3			X		X		X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1						X	
pH	All	NDPs: 0 Tests: 3			X		X		X
pH Value of Filtered Water	All	NDPs: 0 Tests: 1						X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3			X		X		X
Sample description	All	NDPs: 0 Tests: 4			X		X	X	X



CERTIFICATE OF ANALYSIS

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SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container						Sample Type
					60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	
	26918388	MS-BH09	ES9	1.20 - 1.20	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	S
	26918381	MS-BH09	ES7	1.00 - 1.00	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	S
	26918374	MS-BH09	ES4	0.50 - 0.50	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	S
	26918367	MS-BH09	ES1	0.10 - 0.10	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	S
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1						X			
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1								X	
Total Organic Carbon	All	NDPs: 0 Tests: 3			X		X				X
Total Sulphate	All	NDPs: 0 Tests: 3			X		X				X
TPH CWG GC (S)	All	NDPs: 0 Tests: 1							X		
VOC MS (S)	All	NDPs: 0 Tests: 4			X		X		X		X



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26918367	MS-BH09	0.10 - 0.10	Light Brown	Silty Clay Loam	Vegetation	None
26918374	MS-BH09	0.50 - 0.50	Light Brown	Sandy Clay Loam	Vegetation	None
26918381	MS-BH09	1.00 - 1.00	Light Brown	Sand	None	None
26918388	MS-BH09	1.20 - 1.20	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Results Legend		Customer Sample Ref.	MS-BH09	MS-BH09	MS-BH09	MS-BH09	
#	ISO17025 accredited.		F-QC5MUB-EOMG	F-AG5MUB-RCQR	F-EL5MUB-RUIJ	F-QG5MUB-M0DL	
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20	
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
diss.fltr	Dissolved / filtered sample.	Sample Type	15/09/2022	15/09/2022	15/09/2022	15/09/2022	
tot.unfltr	Total / unfiltered sample.	Date Sampled	09:36	09:38	09:41	09:44	
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022	17/09/2022	17/09/2022	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220924-23	220924-23	220924-23	220924-23	
(F)	Trigger breach confirmed	SDG Ref	26918367	26918374	26918381	26918388	
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES7	ES9	
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	15	15	10	8.1	
2,4,5-T*	<0.01 mg/kg	SUB	<0.01				
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01				
2,4-D*	<0.01 mg/kg	SUB	<0.01				
2,4-DB*	<0.01 mg/kg	SUB	<0.01				
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01				
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01				
Acifluorfen*	<0.01 mg/kg	SUB	<0.01				
Bentazone*	<0.01 mg/kg	SUB	<0.01				
Bromoxynil*	<0.01 mg/kg	SUB	<0.01				
Dicamba*	<0.01 mg/kg	SUB	<0.01				
Diclofop*	<0.01 mg/kg	SUB	<0.01				
Dinoseb*	<0.01 mg/kg	SUB	<0.01				
DNOC*	<0.01 mg/kg	SUB	<0.01				
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01				
loxynil*	<0.01 mg/kg	SUB	<0.01				
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01				
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01				
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01				
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01				
Triclopyr*	<0.01 mg/kg	SUB	<0.01				
Triclosan*	<0.01 mg/kg	SUB	<0.01				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15		<15	
			M	M		M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12		<12	
			M	M		M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01		<0.01	
			M	M		M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01		<0.01	
			M	M		M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015		<0.015	
			M	M		M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035		<0.035	
			M	M		M	
Soil Organic Matter (SOM)	<0.35 %	TM132	3.33	3.69		<0.35	
			#	#		#	
pH	1 pH Units	TM133	6.97	8.26		8.35	
			M	M		M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	15		<10	
			M	M		M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6		<1.2	
			M	M		M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1		<1	
			M	M		M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Results Legend			Customer Sample Ref.			
# ISO17025 accredited.			MS-BH09	MS-BH09	MS-BH09	MS-BH09
M mCERTS accredited.			F-CCSMUB-EOMG	F-AG5MUB-RCOR	F-ELSMUB-RUIJ	F-GQ5MUB-MODL
sq. Aqueous / settled sample.			0.10 - 0.10	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20
dis.filt Dissolved / filtered sample.		Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt Total / unfiltered sample.		Sample Type	15/09/2022	15/09/2022	15/09/2022	15/09/2022
* Subcontracted - refer to subcontractor report for accreditation status.		Date Sampled	09:36	09:38	09:41	09:44
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Sample Time	17/09/2022	17/09/2022	17/09/2022	17/09/2022
(F) Trigger breach confirmed		Date Received	220924-23	220924-23	220924-23	220924-23
1-4* Sample deviation (see appendix)		SDG Ref	26918367	26918374	26918381	26918388
		Lab Sample No.(s)	ES1	ES4	ES7	ES9
		AGS Reference				
Component	LOD/Units	Method				
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M		<1 M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M		<15 @ M
Chromium, Trivalent	<0.9 mg/kg	TM181	13.9	10.2		4.46
Arsenic	<0.6 mg/kg	TM181	15.5 M	12.7 M		0.873 M
Boron	<0.7 mg/kg	TM181	13.4 #	10.9 #		0.88 #
Cadmium	<0.02 mg/kg	TM181	0.736 M	0.0768 M		0.0895 M
Chromium	<0.9 mg/kg	TM181	13.9 M	10.2 M		4.46 M
Copper	<1.4 mg/kg	TM181	18.1 M	11.9 M		3.05 M
Iron	<1000 mg/kg	TM181	24600 #	24400 #		2630 #
Lead	<0.7 mg/kg	TM181	70.3 M	61 M		5.41 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M		<0.1 M
Nickel	<0.2 mg/kg	TM181	23.3 M	21.5 M		6.34 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #		<1 #
Zinc	<1.9 mg/kg	TM181	92.1 M	76.5 M		11.9 M
Sulphate, Total	<48 mg/kg	TM221	324 M	211 M		<48 M
Total Sulphur (ASB)	<0.0016 %	TM221	0.0108	0.00702		<0.0016
Nitrite as NO ₂ , 2:1 water soluble	<0.1 mg/kg	TM243	1.46	0.37		<0.1
Water Soluble Sulphate as SO ₄ 2:1 Extract	<0.004 g/l	TM243	0.0286 M	0.0212 M		0.0084 M
Nitrate as NO ₃ , 2:1 water soluble	<1 mg/kg	TM243	6.33	5.73		1.03
EPH (C5-C40)	<35 mg/kg	TM415	<35	93.3		<35
EPH Surrogate % recovery**	%	TM415	96.2	107		103
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 M	93.3 M		<35 M



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23

Report Number: 665877

Superseded Report: 663461

Client Ref.: F212561

Location: Keadby 3

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH09 F-CCSMUB-EOMG 0.10 - 0.10 Soil/Solid (S)						
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	15/09/2022 09:36 17/09/2022 220924-23 26918367 ES1						
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
dis.s.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-4*§@	Sample deviation (see appendix)								
Component	LOD/Units			Method					
Dichlorvos	<50 µg/kg			TM073	<50				
Mevinphos	<50 µg/kg			TM073	<50				
Phorate	<50 µg/kg			TM073	<50				
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50						
Diazinon	<50 µg/kg	TM073	<50						
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50						
Disulfoton	<50 µg/kg	TM073	<50						
Heptachlor	<50 µg/kg	TM073	<50						
Aldrin	<50 µg/kg	TM073	<50						
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50						
Methyl parathion	<50 µg/kg	TM073	<50						
Malathion	<50 µg/kg	TM073	<50						
Fenitrothion	<50 µg/kg	TM073	<50						
Heptachlor epoxide	<50 µg/kg	TM073	<50						
Parathion	<50 µg/kg	TM073	<50						
Endosulphan I	<50 µg/kg	TM073	<50						
p,p-DDE	<50 µg/kg	TM073	<50						
Dieldrin	<50 µg/kg	TM073	<50						
Endrin	<50 µg/kg	TM073	<50						
p,p-TDE (DDD)	<50 µg/kg	TM073	<50						
Ethion	<50 µg/kg	TM073	<50						
Endosulphan II	<50 µg/kg	TM073	<50						
p,p-DDT	<50 µg/kg	TM073	<50						
p,p-Methoxychlor	<50 µg/kg	TM073	<50						
Endosulphan sulphate	<50 µg/kg	TM073	<50						
Azinphos-methyl	<50 µg/kg	TM073	<50						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH09	MS-BH09	MS-BH09		
#	ISO17025 accredited.		F-CCSMUB-EOMG	F-AGSMUB-RCQR	F-GQSMUB-MODL		
M	mCERTS accredited.		0.10 - 0.10	0.50 - 0.50	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	15/09/2022	15/09/2022	15/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:36	09:38	09:44		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022	17/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220924-23	220924-23	220924-23		
	(F) Trigger breach confirmed	SDG Ref	26918367	26918374	26918388		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES4	ES9		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	88.8	89	90.5		
Acenaphthene-d10 % recovery**	%	TM218	93	92.8	92.7		
Phenanthrene-d10 % recovery**	%	TM218	95.3	95.3	96.6		
Chrysene-d12 % recovery**	%	TM218	85.9	88.2	89.1		
Perylene-d12 % recovery**	%	TM218	78.5	82	83.5		
Naphthalene	<9 µg/kg	TM218	25	13.5	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	192	66	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	205	32.4	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	178	32.2	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	16.8	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	70.7	24	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	109	24.1	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	73.1	<15	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	58.1	<18	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	54.2	<24	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	965	209	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH09			
#	ISO17025 accredited.		F-ELSMUB-RUIJ			
M	mCERTS accredited.		1.00 - 1.00			
aq	Aqueous / settled sample.		Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.	Depth (m)	15/09/2022			
tot.unfilt	Total / unfiltered sample.	Sample Type	09:41			
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	17/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	220924-23			
(F)	Trigger breach confirmed	Date Received	26918381			
1-4*\$@	Sample deviation (see appendix)	SDG Ref	ES7			
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH09				
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-ELSMUB-RUIJ 1.00 - 1.00 Soil/Solid (S) 15/09/2022 09:41 17/09/2022 220924-23 26918381 ES7				
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

TPH CWG (S)

Results Legend		Customer Sample Ref.							
# ISO17025 accredited.		MS-BH09							
M mCERTS accredited.		F-ELSMUB-RUIJ							
aq Aqueous / settled sample.		1.00 - 1.00							
diss.filt Dissolved / filtered sample.		Soil/Solid (S)							
tot.unfilt Total / unfiltered sample.		15/09/2022							
* Subcontracted - refer to subcontractor report for accreditation status.		09:41							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		17/09/2022							
(F) Trigger breach confirmed		220924-23							
1-4* @ Sample deviation (see appendix)		26918381							
		ES7							
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM089	90.2	@					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1230						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH09 F-QC5MUB-EOMG 0.10 - 0.10 Soil/Solid (S) 15/09/2022 09:36 17/09/2022 220924-23 26918367 ES1	MS-BH09 F-AG5MUB-RCQR 0.50 - 0.50 Soil/Solid (S) 15/09/2022 09:38 17/09/2022 220924-23 26918374 ES4	MS-BH09 F-EL5MUB-RUIJ 1.00 - 1.00 Soil/Solid (S) 15/09/2022 09:41 17/09/2022 220924-23 26918381 ES7	MS-BH09 F-GQ5MUB-M0DL 1.20 - 1.20 Soil/Solid (S) 15/09/2022 09:44 17/09/2022 220924-23 26918388 ES9
Component	LOD/Units	Method				
Dibromofluoromethane**	%	TM116	104 @	110 @	110 @	110 @
Toluene-d8**	%	TM116	97 @	94.8 @	98.8 @	98.6 @
4-Bromofluorobenzene**	%	TM116	88.6 @	86.8 @	95 @	96.2 @
Dichlorodifluoromethane	<6 µg/kg	TM116			<6 @ #	
Chloromethane	<7 µg/kg	TM116			<7 @ #	
Vinyl Chloride	<6 µg/kg	TM116			<6 @ M	
Bromomethane	<10 µg/kg	TM116			<10 @ M	
Chloroethane	<10 µg/kg	TM116			<10 @ M	
Trichlorofluoromethane	<6 µg/kg	TM116			<6 @ M	
1,1-Dichloroethene	<10 µg/kg	TM116			<10 @ #	
Carbon Disulphide	<7 µg/kg	TM116			<7 3 @ M	
Dichloromethane	<10 µg/kg	TM116			<16 @ #	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100 @ M	<100 @ M	<10 @ M	<10 @ M
trans-1,2-Dichloroethene	<10 µg/kg	TM116			<10 @ M	
1,1-Dichloroethane	<8 µg/kg	TM116			<8 @ M	
cis-1,2-Dichloroethene	<6 µg/kg	TM116			<6 @ M	
2,2-Dichloropropane	<10 µg/kg	TM116			<10 @	
Bromochloromethane	<10 µg/kg	TM116			<10 @ M	
Chloroform	<8 µg/kg	TM116			<8 @ M	
1,1,1-Trichloroethane	<7 µg/kg	TM116			<7 @ M	
1,1-Dichloropropene	<10 µg/kg	TM116			<10 @ M	
Carbontetrachloride	<10 µg/kg	TM116			<10 @ M	
1,2-Dichloroethane	<5 µg/kg	TM116			<5 @ M	
Benzene	<9 µg/kg	TM116	<90 @ M	<90 @ M	<9 @ M	<9 @ M
Trichloroethene	<9 µg/kg	TM116			<9 @ #	
1,2-Dichloropropane	<10 µg/kg	TM116			<10 @ M	
Dibromomethane	<9 µg/kg	TM116			<9 @ M	
Bromodichloromethane	<7 µg/kg	TM116			<7 @ M	
cis-1,3-Dichloropropene	<10 µg/kg	TM116			<10 @ M	
Toluene	<7 µg/kg	TM116	<70 @ M	<70 @ M	<7 @ M	<7 @ M
trans-1,3-Dichloropropene	<10 µg/kg	TM116			<10 @	
1,1,2-Trichloroethane	<10 µg/kg	TM116			<10 @ M	
1,3-Dichloropropane	<7 µg/kg	TM116			<7 @ M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH09 F-CCSMUB-EOMG 0.10 - 0.10 Soil/Solid (S) 15/09/2022 09:36 17/09/2022 220924-23 26918367 ES1	MS-BH09 F-AGSMUB-RCOR 0.50 - 0.50 Soil/Solid (S) 15/09/2022 09:38 17/09/2022 220924-23 26918374 ES4	MS-BH09 F-ELSMUB-RUIJ 1.00 - 1.00 Soil/Solid (S) 15/09/2022 09:41 17/09/2022 220924-23 26918381 ES7	MS-BH09 F-GQSMUB-MODL 1.20 - 1.20 Soil/Solid (S) 15/09/2022 09:44 17/09/2022 220924-23 26918388 ES9
Component	LOD/Units	Method				
Tetrachloroethene	<5 µg/kg	TM116			<5 @ M	
Dibromochloromethane	<10 µg/kg	TM116			<10 @ M	
1,2-Dibromoethane	<10 µg/kg	TM116			<10 @ M	
Chlorobenzene	<5 µg/kg	TM116			<5 @ M	
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116			<10 @ M	
Ethylbenzene	<4 µg/kg	TM116	<40 @ M	<40 @ M	<4 @ M	<4 @ M
p/m-Xylene	<10 µg/kg	TM116	<100 @ #	<100 @ #	<10 @ #	<10 @ #
o-Xylene	<10 µg/kg	TM116	<100 @ M	<100 @ M	<10 @ M	<10 @ M
Styrene	<10 µg/kg	TM116			<10 @ #	
Bromofom	<10 µg/kg	TM116			<10 @ M	
Isopropylbenzene	<5 µg/kg	TM116			<5 @ #	
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116			<10 @ #	
1,2,3-Trichloropropane	<16 µg/kg	TM116			<16 @ M	
Bromobenzene	<10 µg/kg	TM116			<10 @ M	
Propylbenzene	<10 µg/kg	TM116			<10 @ M	
2-Chlorotoluene	<9 µg/kg	TM116			<9 @ M	
1,3,5-Trimethylbenzene	<8 µg/kg	TM116			<8 @ M	
4-Chlorotoluene	<10 µg/kg	TM116			<10 @ M	
tert-Butylbenzene	<14 µg/kg	TM116			<14 @ #	
1,2,4-Trimethylbenzene	<9 µg/kg	TM116			<9 @ #	
sec-Butylbenzene	<10 µg/kg	TM116			<10 @	
4-Isopropyltoluene	<10 µg/kg	TM116			<10 @	
1,3-Dichlorobenzene	<8 µg/kg	TM116			<8 @ M	
1,4-Dichlorobenzene	<5 µg/kg	TM116			<5 @ M	
n-Butylbenzene	<11 µg/kg	TM116			<11 @	
1,2-Dichlorobenzene	<10 µg/kg	TM116			<10 @ M	
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116			<14 @ M	
Tert-amyl methyl ether	<10 µg/kg	TM116			<10 @ #	
1,2,4-Trichlorobenzene	<20 µg/kg	TM116			<20 @	
Hexachlorobutadiene	<20 µg/kg	TM116			<20 @	
Naphthalene	<13 µg/kg	TM116			<13 @ M	
1,2,3-Trichlorobenzene	<20 µg/kg	TM116			<20 @ #	
1,3,5-Trichlorobenzene	<20 µg/kg	TM116			<20 @	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH09ES1 0.10 - 0.10 SOLID 15/09/2022 00:00:00 17/09/2022 05:00:00 220924-23 26918367 TM048	30/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH09ES4 0.50 - 0.50 SOLID 15/09/2022 00:00:00 17/09/2022 05:00:00 220924-23 26918374 TM048	30/09/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH09ES9 1.20 - 1.20 SOLID 15/09/2022 00:00:00 17/09/2022 05:00:00 220924-23 26918388 TM048	30/09/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference	
Mass Sample taken (kg)	0.192
Mass of dry sample (kg)	0.175
Particle Size <4mm	>95%

Site Location	Keadby 3
Natural Moisture Content (%)	9.83
Dry Matter Content (%)	91

Case	
SDG	220924-23
Lab Sample Number(s)	26918388
Sampled Date	15-Sep-2022
Customer Sample Ref.	MS-BH09 ES9
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	2.5	<2	5	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	28.5	<3	57	<6
Ammoniacal Nitrogen as N	0.112	<0.01	0.224	<0.02
Arsenic	0.00116	<0.0005	0.00232	<0.001
Nitrate as NO3	1.93	<0.3	3.86	<0.6
Total Ammonium Low as NH4	0.144	<0.01	0.288	<0.02
Boron	0.0174	<0.01	0.0348	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0029	<0.001	0.0058	<0.002
Copper	0.00837	<0.0003	0.0167	<0.0006
Lead	0.00403	<0.0002	0.00806	<0.0004
Nickel	0.00142	<0.0004	0.00284	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.0056	<0.001	0.0112	<0.002
Calcium (Dis.Filt) mg/l	12.7	<0.2	25.4	<0.4
Iron (Dis.Filt) mg/l	0.668	<0.019	1.34	<0.038
Hardness dissolved	42.8	<0.65	85.6	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	26-Sep-2022
pH (pH Units)	7.87
Conductivity (µS/cm)	81
Volume Leachant (Litres)	0.333
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.192	Natural Moisture Content (%)	9.83
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	91
Particle Size <4mm	>95%		

Case	
SDG	220924-23
Lab Sample Number(s)	26918388
Sampled Date	15-Sep-2022
Customer Sample Ref.	MS-BH09 ES9
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	26-Sep-2022
pH (pH Units)	7.87
Conductivity (µS/cm)	81
Volume Leachant (Litres)	0.333
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

25/10/2022 12:36:41

12:36:22 25/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220924-23
Client Ref.: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Test Completion Dates

Lab Sample No(s)	26918367	26918374	26918381	26918388
Customer Sample Ref.	MS-BH09	MS-BH09	MS-BH09	MS-BH09
AGS Ref.	ES1	ES4	ES7	ES9
Depth	0.10 - 0.10	0.50 - 0.50	1.00 - 1.00	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	25-Oct-2022			
Ammonium Low				03-Oct-2022
Ammonium Soil by Titration	27-Sep-2022	27-Sep-2022		27-Sep-2022
Anions by Kone (soil)	28-Sep-2022	28-Sep-2022		28-Sep-2022
Anions by Kone (w)				03-Oct-2022
Asbestos ID in Solid Samples	30-Sep-2022	30-Sep-2022		30-Sep-2022
CEN 2:1 Leachate (1 Stage)				27-Sep-2022
CEN Readings				28-Sep-2022
Chromium III	28-Sep-2022	28-Sep-2022		04-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	29-Sep-2022	28-Sep-2022		29-Sep-2022
Dissolved Metals by ICP-MS				04-Oct-2022
Easily Liberated Sulphide	28-Sep-2022	28-Sep-2022		28-Sep-2022
Elemental Sulphur	30-Sep-2022	30-Sep-2022		30-Sep-2022
EPH	30-Sep-2022	30-Sep-2022		30-Sep-2022
EPH by GCxGC-FID	27-Sep-2022	29-Sep-2022		27-Sep-2022
EPH CWG GC (S)			28-Sep-2022	
GRO by GC-FID (S)	30-Sep-2022	30-Sep-2022	30-Sep-2022	30-Sep-2022
Hexavalent Chromium (s)	27-Sep-2022	27-Sep-2022		27-Sep-2022
Low Level Cyanide (W)				30-Sep-2022
Low Level Hexavalent Chromium (w)				29-Sep-2022
Mercury Dissolved				03-Oct-2022
Metals in solid samples by OES	28-Sep-2022	29-Sep-2022		27-Sep-2022
Moisture at 105C				26-Sep-2022
Nitrite by Kone (w)				29-Sep-2022
NO3, NO2 and TON by KONE (s)	28-Sep-2022	04-Oct-2022		28-Sep-2022
OC OP Pesticides and Triazine Herb	28-Sep-2022			
PAH by GCMS	28-Sep-2022	28-Sep-2022		28-Sep-2022
PAH Spec MS - Aqueous (W)				30-Sep-2022
pH	27-Sep-2022	27-Sep-2022		27-Sep-2022
pH Value of Filtered Water				03-Oct-2022
Phenols by HPLC (S)	28-Sep-2022	28-Sep-2022		28-Sep-2022
Sample description	24-Sep-2022	26-Sep-2022	24-Sep-2022	24-Sep-2022
Semi Volatile Organic Compounds			30-Sep-2022	
Total Organic and Inorganic Carbon				30-Sep-2022
Total Organic Carbon	28-Sep-2022	29-Sep-2022		28-Sep-2022
Total Sulphate	28-Sep-2022	28-Sep-2022		28-Sep-2022
TPH CWG GC (S)			30-Sep-2022	
VOC MS (S)	30-Sep-2022	30-Sep-2022	30-Sep-2022	30-Sep-2022



CERTIFICATE OF ANALYSIS

SDG: 220924-23
Client Ref: F212561

Report Number: 665877
Location: Keadby 3

Superseded Report: 663461

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220927-21
Your Reference:	F212561
Location:	Keadby 3
Report No:	663849
Order Number:	386/121917/CP

We received 4 samples on Saturday September 24, 2022 and 3 of these samples were scheduled for analysis which was completed on Friday October 07, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

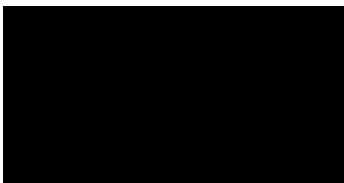
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26926953	AR-BH01	ES2	0.10 - 0.10	21/09/2022
26926960	AR-BH01	ES4	0.45 - 0.45	21/09/2022
26926967	AR-BH01	ES5	0.80 - 0.80	21/09/2022
26926976	AR-BH01	ES7	1.20 - 1.20	21/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26926953	AR-BH01	ES2	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
		26926960	AR-BH01	ES4	0.45 - 0.45	1kg TUB with Handle (ALE260)	S
		26926967	AR-BH01	ES5	0.80 - 0.80	250g Amber Jar (ALE215)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
					60g VOC (ALE215)	S	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2					
PAH by GCMS	All	NDPs: 0 Tests: 2					
pH	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Results Legend							
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	Lab Sample No(s)	26926953	26926960	26926967			
	Customer Sample Reference	AR-BH01	AR-BH01	AR-BH01			
	AGS Reference	ES2	ES4	ES5			
	Depth (m)	0.10 - 0.10	0.45 - 0.45	0.80 - 0.80			
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X		
Sample description	All	NDPs: 0 Tests: 2	X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X		
Total Sulphate	All	NDPs: 0 Tests: 2	X		X		
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26926953	AR-BH01	0.10 - 0.10	Light Brown	Silty Sand	Stones	Vegetation
26926967	AR-BH01	0.80 - 0.80	Light Brown	Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01 ADS4220921002	AR-BH01 ADS4220921005			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.10 - 0.10	0.80 - 0.80			
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)			
aq	Aqueous / settled sample.		21/09/2022	21/09/2022			
diss.filt	Dissolved / filtered sample.		13:40	14:23			
tot.unfilt	Total / unfiltered sample.		24/09/2022	24/09/2022			
*	Subcontracted - refer to subcontractor report for accreditation status.		220927-21	220927-21			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		26926963	26926967			
(F)	Trigger breach confirmed		ES2	ES5			
1-4*§	Sample deviation (see appendix)						
Component	LOD/Units		Method				
Moisture Content Ratio (% of as received sample)	%	PM024	9.5	7.9			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	0.011	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	0.457	1.98	#	#	
pH	1 pH Units	TM133	9.19	9.22	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	2.44	1.68			
Arsenic	<0.6 mg/kg	TM181	0.626	0.979	M	M	
Boron	<0.7 mg/kg	TM181	31.6	18.8	#	#	
Cadmium	<0.02 mg/kg	TM181	0.177	0.225	M	M	
Chromium	<0.9 mg/kg	TM181	2.44	1.68	M	M	
Copper	<1.4 mg/kg	TM181	3.31	<1.4	M	M	
Iron	<1000 mg/kg	TM181	4280	3830	#	#	
Lead	<0.7 mg/kg	TM181	8.03	3.17	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	2.08	1.41	M	M	
Selenium	<1 mg/kg	TM181	1.38	1.3	#	#	
Zinc	<1.9 mg/kg	TM181	20.4	19.1	M	M	
Sulphate, Total	<48 mg/kg	TM221	233	299	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.00777	0.00996			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1	0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0159	0.0535	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1	<1			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35			
EPH Surrogate % recovery**	%	TM415	91.5	92.4			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH01			
#	ISO17025 accredited.		ADS4220921002	ADS4220921005			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:40	14:23			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	24/09/2022	24/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-21	220927-21			
	(F) Trigger breach confirmed	SDG Ref	26926963	26926967			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES5			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	91.7	90.4			
Acenaphthene-d10 % recovery**	%	TM218	93.4	92.3			
Phenanthrene-d10 % recovery**	%	TM218	103	101			
Chrysene-d12 % recovery**	%	TM218	97.4	93.3			
Perylene-d12 % recovery**	%	TM218	84	80.4			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	99.3	48.6			
			M	M			
Anthracene	<16 µg/kg	TM218	17.6	26.3			
			M	M			
Fluoranthene	<17 µg/kg	TM218	202	168			
			M	M			
Pyrene	<15 µg/kg	TM218	174	150			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	71.3	61.5			
			M	M			
Chrysene	<10 µg/kg	TM218	79.4	60.8			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	63.7	46.5			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	29.6	27.4			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	52.5	37.3			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	42.5	25			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	33.5	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	866	651			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AR-BH01ES2 0.10 - 0.10 SOLID 21/09/2022 00:00:00 24/09/2022 05:00:00 220927-21 26926953 TM048	03/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	AR-BH01ES4 0.45 - 0.45 SOLID 21/09/2022 00:00:00 24/09/2022 05:00:00 220927-21 26926960 TM048	04/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-21
Client Ref.: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26926953	26926960	26926967
Customer Sample Ref.	AR-BH01	AR-BH01	AR-BH01
AGS Ref.	ES2	ES4	ES5
Depth	0.10 - 0.10	0.45 - 0.45	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	30-Sep-2022		30-Sep-2022
Anions by Kone (soil)	04-Oct-2022		04-Oct-2022
Asbestos ID in Solid Samples	04-Oct-2022	05-Oct-2022	
Chromium III	30-Sep-2022		30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	05-Oct-2022		05-Oct-2022
Easily Liberated Sulphide	06-Oct-2022		06-Oct-2022
Elemental Sulphur	04-Oct-2022		30-Sep-2022
EPH	04-Oct-2022		04-Oct-2022
EPH by GCxGC-FID	29-Sep-2022		29-Sep-2022
GRO by GC-FID (S)	04-Oct-2022		04-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022		28-Sep-2022
Metals in solid samples by OES	30-Sep-2022		30-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022		04-Oct-2022
PAH by GCMS	07-Oct-2022		05-Oct-2022
pH	27-Sep-2022		27-Sep-2022
Phenols by HPLC (S)	29-Sep-2022		29-Sep-2022
Sample description	27-Sep-2022		27-Sep-2022
Total Organic Carbon	30-Sep-2022		30-Sep-2022
Total Sulphate	29-Sep-2022		29-Sep-2022
VOC MS (S)	03-Oct-2022		03-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-21
Client Ref: F212561

Report Number: 663849
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	06 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220927-22
Your Reference:	F212561
Location:	Keadby 3
Report No:	663760
Order Number:	386/121917/CP

We received 4 samples on Thursday September 22, 2022 and 4 of these samples were scheduled for analysis which was completed on Thursday October 06, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26927046	MS-BH10	ES2	0.10 - 0.10	21/09/2022
26927054	MS-BH10	ES4	0.45 - 0.45	21/09/2022
26927063	MS-BH10	ES7	0.85 - 0.85	21/09/2022
26927072	MS-BH10	ES9	1.10 - 1.10	21/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type
	X Test	N No Determination Possible									
<p>Sample Types -</p> <ul style="list-style-type: none"> S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other 			26927046	MS-BH10	ES2	0.10 - 0.10	1kg TUB with Handle (ALE260)	S			S
			26927054	MS-BH10	ES4	0.45 - 0.45	250g Amber Jar (ALE210)	S			S
			26927063	MS-BH10	ES7	0.85 - 0.85	60g VOC (ALE215)	S			S
			26927072	MS-BH10	ES9	1.10 - 1.10	250g Amber Jar (ALE210)	S			S
Ammonium Low	All	NDPs: 0 Tests: 1									
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3									
Anions by Kone (soil)	All	NDPs: 0 Tests: 3									
Anions by Kone (w)	All	NDPs: 0 Tests: 1									
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3									
CEN Readings	All	NDPs: 0 Tests: 1									
Chromium III	All	NDPs: 0 Tests: 4									
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3									
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1									
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3									
Elemental Sulphur	All	NDPs: 0 Tests: 3									
EPH	All	NDPs: 0 Tests: 3									
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3									
EPH CWG GC (S)	All	NDPs: 0 Tests: 1									
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4									



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container						Sample Type
					60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3			X				X	X	S
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1							X		S
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1							X		S
Mercury Dissolved	All	NDPs: 0 Tests: 1							X		S
Metals in solid samples by OES	All	NDPs: 0 Tests: 3			X				X	X	S
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1							X		S
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3			X				X	X	S
PAH by GCMS	All	NDPs: 0 Tests: 3			X				X	X	S
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1							X		S
PCBs by GCMS	All	NDPs: 0 Tests: 1							X		S
pH	All	NDPs: 0 Tests: 3			X				X	X	S
pH Value of Filtered Water	All	NDPs: 0 Tests: 1							X		S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3			X				X	X	S
Sample description	All	NDPs: 0 Tests: 4			X			X	X	X	S
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1							X		S



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container				Sample Type	
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)		
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	26927046	MS-BH10	ES2	0.10 - 0.10						S
	26927054	MS-BH10	ES4	0.45 - 0.45						S
	26927063	MS-BH10	ES7	0.85 - 0.85						S
	26927072	MS-BH10	ES9	1.10 - 1.10						S
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1						X		
Total Organic Carbon	All	NDPs: 0 Tests: 3			X			X	X	
Total Sulphate	All	NDPs: 0 Tests: 3			X			X	X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1					X			
VOC MS (S)	All	NDPs: 0 Tests: 4			X		X	X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26927046	MS-BH10	0.10 - 0.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
26927054	MS-BH10	0.45 - 0.45	Dark Brown	Sandy Loam	Stones	Vegetation
26927063	MS-BH10	0.85 - 0.85	Light Brown	Sandy Silt Loam	Stones	Vegetation
26927072	MS-BH10	1.10 - 1.10	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH10	MS-BH10	MS-BH10	MS-BH10		
#	ISO17025 accredited.		ADS4220914002	ADS4220914004	ADS4220914007	ADS4220914009		
M	mCERTS accredited.	Depth (m)	0.10 - 0.10	0.45 - 0.45	0.85 - 0.85	1.10 - 1.10		
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Date Sampled	21/09/2022	21/09/2022	21/09/2022	21/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Received	08:24	08:24	08:24	08:24		
	* Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref	220927-22	220927-22	220927-22	220927-22		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Lab Sample No.(s)	26927046	26927054	26927063	26927072		
	(F) Trigger breach confirmed	AGS Reference	ES2	ES4	ES7	ES9		
	1-4* @ Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	15	13	19	19		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15		<15	<15	M	M
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12		<12	<12	M	M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	M	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		<0.01	<0.01	M	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		<0.015	<0.015	M	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		<0.035	<0.035	M	M
Soil Organic Matter (SOM)	<0.35 %	TM132	5.29		4.98	1.83	#	#
pH	1 pH Units	TM133	8.24		8.19	8.27	M	M
Sulphur, Elemental	<10 mg/kg	TM136	10.5		12	<10	M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6	<0.6	M	M
Cyanide, Total	<1 mg/kg	TM153	<1		<1	<1	M	M
Cyanide, Free	<1 mg/kg	TM153	<1		<1	<1	M	M
PCB congener 28	<3 µg/kg	TM168		<3			M	
PCB congener 52	<3 µg/kg	TM168		<3			M	
PCB congener 101	<3 µg/kg	TM168		<3			M	
PCB congener 118	<3 µg/kg	TM168		<3			M	
PCB congener 138	<3 µg/kg	TM168		<3			M	
PCB congener 153	<3 µg/kg	TM168		<3			M	
PCB congener 180	<3 µg/kg	TM168		<3			M	
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21				
PCB congener 81	<3 µg/kg	TM168		<3			M	
PCB congener 77	<3 µg/kg	TM168		<3			M	
PCB congener 123	<3 µg/kg	TM168		<3			M	
PCB congener 114	<3 µg/kg	TM168		<3			M	
PCB congener 105	<3 µg/kg	TM168		<3			M	
PCB congener 126	<3 µg/kg	TM168		<3			M	
PCB congener 167	<3 µg/kg	TM168		<3			M	
PCB congener 156	<3 µg/kg	TM168		<3			M	
PCB congener 157	<3 µg/kg	TM168		<3			M	
PCB congener 169	<3 µg/kg	TM168		<3			M	
PCB congener 189	<3 µg/kg	TM168		<3			M	
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168		<36				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH10	MS-BH10	MS-BH10		
#	ISO17025 accredited.		MS-BH10	MS-BH10	MS-BH10		
M	mCERTS accredited.		ADS4220914002	ADS4220914007	ADS4220914009		
aq	Aqueous / settled sample.	Depth (m)	0.10 - 0.10	0.85 - 0.85	1.10 - 1.10		
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
tot.unfilt	Total / unfiltered sample.	Date Sampled	21/09/2022	21/09/2022	21/09/2022		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	08:24	08:24	08:24		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	22/09/2022	22/09/2022	22/09/2022		
(F)	Trigger breach confirmed	SDG Ref	220927-22	220927-22	220927-22		
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	26927046	26927063	26927072		
		AGS Reference	ES2	ES7	ES9		
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	89.5	86	84.1		
Acenaphthene-d10 % recovery**	%	TM218	96.5	86.9	83.7		
Phenanthrene-d10 % recovery**	%	TM218	106	86.9	84.2		
Chrysene-d12 % recovery**	%	TM218	97.2	83	79.9		
Perylene-d12 % recovery**	%	TM218	82	78.6	77		
Naphthalene	<9 µg/kg	TM218	32	<9	<9		
			M	M	M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			M	M	M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			M	M	M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			M	M	M		
Phenanthrene	<15 µg/kg	TM218	107	85.4	<15		
			M	M	M		
Anthracene	<16 µg/kg	TM218	19	<16	<16		
			M	M	M		
Fluoranthene	<17 µg/kg	TM218	121	96.3	<17		
			M	M	M		
Pyrene	<15 µg/kg	TM218	112	83	<15		
			M	M	M		
Benz(a)anthracene	<14 µg/kg	TM218	43.3	46.1	<14		
			M	M	M		
Chrysene	<10 µg/kg	TM218	63.7	46.7	<10		
			M	M	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	58.2	49.5	<15		
			M	M	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	21.8	18.5	<14		
			M	M	M		
Benzo(a)pyrene	<15 µg/kg	TM218	34	37.5	<15		
			M	M	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	31.1	24.7	<18		
			M	M	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			M	M	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	31.5	30	<24		
			M	M	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	674	518	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH10			
#	ISO17025 accredited.		ADS4220914004			
M	mCERTS accredited.		0.45 - 0.45			
aq	Aqueous / settled sample.		Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.		21/09/2022			
tot.unfilt	Total / unfiltered sample.		08:24			
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	22/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	22/09/2022			
(F)	Trigger breach confirmed	Date Sampled	220927-22			
1-4*\$@	Sample deviation (see appendix)	Sample Time	26927054			
		Date Received	ES4			
		SDG Ref				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH10 ADS4220914004 0.45 - 0.45 Soil/Solid (S) 21/09/2022 08:24 22/09/2022 220927-22 26927054 ES4				
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	132				
Benzo(a)anthracene	<100 µg/kg	TM157	167				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	123				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	397				
Fluoranthene	<100 µg/kg	TM157	641				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	117				
Phenanthrene	<100 µg/kg	TM157	845				
Pyrene	<100 µg/kg	TM157	706				
Naphthalene	<100 µg/kg	TM157	254				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.		MS-BH10					
#	ISO17025 accredited.			ADS4220914004					
M	mCERTS accredited.			0.45 - 0.45					
aq	Aqueous / settled sample.			Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.			21/09/2022					
tot.unfilt	Total / unfiltered sample.			08:24					
	* Subcontracted - refer to subcontractor report for accreditation status.			22/09/2022					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			220927-22					
(F)	Trigger breach confirmed			26927054					
1-4*§	Sample deviation (see appendix)			ES4					
Component	LOD/Units	Method	MS-BH10	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref
GRO Surrogate % recovery**	%	TM089	81.1						
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10						
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						#
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						#
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						#
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	4260						#
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	5160						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	14600						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10						
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						#
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						#
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						#
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	8230						#
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1130						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	9440						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	14600						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50						
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH10	MS-BH10	MS-BH10	MS-BH10		
#	ISO17025 accredited.		ADS4220914002	ADS4220914004	ADS4220914007	ADS4220914009		
M	mCERTS accredited.		0.10 - 0.10	0.45 - 0.45	0.85 - 0.85	1.10 - 1.10		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022	21/09/2022	21/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	08:24	08:24	08:24	08:24		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	22/09/2022	22/09/2022	22/09/2022	22/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-22	220927-22	220927-22	220927-22		
	(F) Trigger breach confirmed	SDG Ref	26927046	26927054	26927063	26927072		
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES4	ES7	ES9		
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	111	104	111	108		
Toluene-d8**	%	TM116	98	96.3	97.6	96.7		
4-Bromofluorobenzene**	%	TM116	87	96.5	91.7	86.6		
Dichlorodifluoromethane	<6 µg/kg	TM116		<120				
Chloromethane	<7 µg/kg	TM116		<140				
Vinyl Chloride	<6 µg/kg	TM116		<120				
Bromomethane	<10 µg/kg	TM116		<200				
Chloroethane	<10 µg/kg	TM116		<200				
Trichlorofluoromethane	<6 µg/kg	TM116		<120				
1,1-Dichloroethene	<10 µg/kg	TM116		<200				
Carbon Disulphide	<7 µg/kg	TM116		<140				
Dichloromethane	<10 µg/kg	TM116		<200				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<200	<100	<100		
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<200				
1,1-Dichloroethane	<8 µg/kg	TM116		<160				
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<120				
2,2-Dichloropropane	<10 µg/kg	TM116		<200				
Bromochloromethane	<10 µg/kg	TM116		<200				
Chloroform	<8 µg/kg	TM116		<160				
1,1,1-Trichloroethane	<7 µg/kg	TM116		<140				
1,1-Dichloropropene	<10 µg/kg	TM116		<200				
Carbon tetrachloride	<10 µg/kg	TM116		<200				
1,2-Dichloroethane	<5 µg/kg	TM116		<100				
Benzene	<9 µg/kg	TM116	<90	<180	<90	<90		
Trichloroethene	<9 µg/kg	TM116		<180				
1,2-Dichloropropane	<10 µg/kg	TM116		<200				
Dibromomethane	<9 µg/kg	TM116		<180				
Bromodichloromethane	<7 µg/kg	TM116		<140				
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<200				
Toluene	<7 µg/kg	TM116	<70	<140	<70	<70		
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<200				
1,1,2-Trichloroethane	<10 µg/kg	TM116		<200				
1,3-Dichloropropane	<7 µg/kg	TM116		<140				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH10	MS-BH10	MS-BH10	MS-BH10
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.fil Dissolved / filtered sample. tot.unfil Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* Sample deviation (see appendix)		MS-BH10 ADS4220914002 0.10 - 0.10 Soil/Solid (S) 21/09/2022 08:24 22/09/2022 220927-22 26927046 ES2	MS-BH10 ADS4220914004 0.45 - 0.45 Soil/Solid (S) 21/09/2022 08:24 22/09/2022 220927-22 26927054 ES4	MS-BH10 ADS4220914007 0.85 - 0.85 Soil/Solid (S) 21/09/2022 08:24 22/09/2022 220927-22 26927063 ES7	MS-BH10 ADS4220914009 1.10 - 1.10 Soil/Solid (S) 21/09/2022 08:24 22/09/2022 220927-22 26927072 ES9	
Component	LOD/Units	Method				
Tetrachloroethene	<5 µg/kg	TM116		<100		
Dibromochloromethane	<10 µg/kg	TM116		<200		
1,2-Dibromoethane	<10 µg/kg	TM116		<200		
Chlorobenzene	<5 µg/kg	TM116		<100		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<200		
Ethylbenzene	<4 µg/kg	TM116	<40	<80	<40	<40
p/m-Xylene	<10 µg/kg	TM116	<100	<200	<100	<100
o-Xylene	<10 µg/kg	TM116	<100	<200	<100	<100
Styrene	<10 µg/kg	TM116		<200		
Bromofom	<10 µg/kg	TM116		<200		
Isopropylbenzene	<5 µg/kg	TM116		<100		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<200		
1,2,3-Trichloropropane	<16 µg/kg	TM116		<320		
Bromobenzene	<10 µg/kg	TM116		<200		
Propylbenzene	<10 µg/kg	TM116		<200		
2-Chlorotoluene	<9 µg/kg	TM116		<180		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<160		
4-Chlorotoluene	<10 µg/kg	TM116		<200		
tert-Butylbenzene	<14 µg/kg	TM116		<280		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<180		
sec-Butylbenzene	<10 µg/kg	TM116		<200		
4-Isopropyltoluene	<10 µg/kg	TM116		<200		
1,3-Dichlorobenzene	<8 µg/kg	TM116		<160		
1,4-Dichlorobenzene	<5 µg/kg	TM116		<100		
n-Butylbenzene	<11 µg/kg	TM116		<220		
1,2-Dichlorobenzene	<10 µg/kg	TM116		<200		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<280		
Tert-amyl methyl ether	<10 µg/kg	TM116		<200		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<400		
Hexachlorobutadiene	<20 µg/kg	TM116		<400		
Naphthalene	<13 µg/kg	TM116		<260		
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<400		
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<400		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

VOC MS (S)

Table with columns for Results Legend, Customer Sample Ref., MS-BH10, MS-BH10, MS-BH10, MS-BH10, Component, LOD/Units, and Method. It contains data for Sum of Detected Xylenes and Sum of BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH10ES2 0.10 - 0.10 SOLID 21/09/2022 00:00:00 22/09/2022 05:00:00 220927-22 26927046 TM048	04/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH10ES4 0.45 - 0.45 SOLID 21/09/2022 00:00:00 22/09/2022 05:00:00 220927-22 26927054 TM048	05/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH10ES7 0.85 - 0.85 SOLID 21/09/2022 00:00:00 22/09/2022 05:00:00 220927-22 26927063 TM048	04/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.246	Natural Moisture Content (%)	41.8
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	70.5
Particle Size <4mm	>95%		

Case	
SDG	220927-22
Lab Sample Number(s)	26927063
Sampled Date	21-Sep-2022
Customer Sample Ref.	MS-BH10 ES7
Depth (m)	0.85 - 0.85

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	<0.003	<0.003	<0.006	<0.006
Nitrite as NO2	0.067	<0.05	0.134	<0.1
pH Value of Filtered Water	8.2	<0.001	-	-
Sulphate (soluble)	10.4	<2	20.8	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Total Organic Carbon	8.47	<3	16.9	<6
Ammoniacal Nitrogen as N	0.155	<0.01	0.31	<0.02
Arsenic	0.000547	<0.0005	0.00109	<0.001
Nitrate as NO3	5.63	<0.3	11.3	<0.6
Total Ammonium Low as NH4	0.199	<0.01	0.398	<0.02
Boron	0.0572	<0.01	0.114	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	<0.001	<0.001	<0.002	<0.002
Copper	0.00501	<0.0003	0.01	<0.0006
Lead	0.00104	<0.0002	0.00208	<0.0004
Nickel	0.003	<0.0004	0.006	<0.0008
Selenium	<0.001	<0.001	<0.002	<0.002
Zinc	0.00416	<0.001	0.00832	<0.002
Calcium (Dis.Filt) mg/l	38.8	<0.2	77.6	<0.4
Iron (Dis.Filt) mg/l	0.171	<0.019	0.342	<0.038
Hardness dissolved	105	<0.65	210	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00002	<0.00002	<0.00004	<0.00004
Acenaphthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Phenanthrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Fluorene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Chrysene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benz(a)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(b)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002

Leach Test Information

Date Prepared	28-Sep-2022
pH (pH Units)	8.42
Conductivity (µS/cm)	247.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.279
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

06/10/2022 12:52:06

12:51:44 06/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.246	Natural Moisture Content (%)	41.8
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	70.5
Particle Size <4mm	>95%		

Case	
SDG	220927-22
Lab Sample Number(s)	26927063
Sampled Date	21-Sep-2022
Customer Sample Ref.	MS-BH10 ES7
Depth (m)	0.85 - 0.85

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(a)pyrene by GCMS	<0.000004	<0.000004	<0.000008	<0.000008
Dibenzo(ah)anthracene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Benzo(ghi)perylene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Indeno(123cd)pyrene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
PAH 16 EPA Total by GCMS	<0.000164	<0.000164	<0.000328	<0.000328

Leach Test Information

Date Prepared	28-Sep-2022
pH (pH Units)	8.42
Conductivity (µS/cm)	247.00
Temperature (°C)	20.70
Volume Leachant (Litres)	0.279
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-22
Client Ref.: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26927046	26927054	26927063	26927072
Customer Sample Ref.	MS-BH10	MS-BH10	MS-BH10	MS-BH10
AGS Ref.	ES2	ES4	ES7	ES9
Depth	0.10 - 0.10	0.45 - 0.45	0.85 - 0.85	1.10 - 1.10
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low			05-Oct-2022	
Ammonium Soil by Titration	30-Sep-2022		30-Sep-2022	30-Sep-2022
Anions by Kone (soil)	04-Oct-2022		04-Oct-2022	04-Oct-2022
Anions by Kone (w)			04-Oct-2022	
Asbestos ID in Solid Samples	04-Oct-2022	05-Oct-2022	04-Oct-2022	
CEN 2:1 Leachate (1 Stage)			28-Sep-2022	
CEN Readings			03-Oct-2022	
Chromium III	30-Sep-2022		06-Oct-2022	30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	05-Oct-2022		05-Oct-2022	05-Oct-2022
Dissolved Metals by ICP-MS			06-Oct-2022	
Easily Liberated Sulphide	06-Oct-2022		06-Oct-2022	06-Oct-2022
Elemental Sulphur	30-Sep-2022		30-Sep-2022	04-Oct-2022
EPH	04-Oct-2022		04-Oct-2022	05-Oct-2022
EPH by GCxGC-FID	29-Sep-2022		29-Sep-2022	29-Sep-2022
EPH CWG GC (S)		29-Sep-2022		
GRO by GC-FID (S)	03-Oct-2022	04-Oct-2022	03-Oct-2022	04-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022		28-Sep-2022	28-Sep-2022
Low Level Cyanide (W)			03-Oct-2022	
Low Level Hexavalent Chromium (w)			04-Oct-2022	
Mercury Dissolved			03-Oct-2022	
Metals in solid samples by OES	30-Sep-2022		30-Sep-2022	30-Sep-2022
Moisture at 105C			28-Sep-2022	
Nitrite by Kone (w)			30-Sep-2022	
NO3, NO2 and TON by KONE (s)	04-Oct-2022		04-Oct-2022	04-Oct-2022
PAH by GCMS	05-Oct-2022		29-Sep-2022	29-Sep-2022
PAH Spec MS - Aqueous (W)			05-Oct-2022	
PCBs by GCMS		30-Sep-2022		
pH	04-Oct-2022		04-Oct-2022	27-Sep-2022
pH Value of Filtered Water			05-Oct-2022	
Phenols by HPLC (S)	29-Sep-2022		29-Sep-2022	29-Sep-2022
Sample description	27-Sep-2022	27-Sep-2022	27-Sep-2022	27-Sep-2022
Semi Volatile Organic Compounds		30-Sep-2022		
Total Organic and Inorganic Carbon			30-Sep-2022	
Total Organic Carbon	30-Sep-2022		30-Sep-2022	30-Sep-2022
Total Sulphate	29-Sep-2022		29-Sep-2022	29-Sep-2022
TPH CWG GC (S)		04-Oct-2022		
VOC MS (S)	04-Oct-2022	04-Oct-2022	04-Oct-2022	04-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-22
Client Ref: F212561

Report Number: 663760
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	06 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220927-23
Your Reference:	F212561
Location:	Keadby 3
Report No:	663724
Order Number:	386/121917/CP

We received 4 samples on Thursday September 22, 2022 and 2 of these samples were scheduled for analysis which was completed on Thursday October 06, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

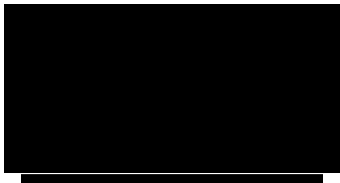
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26927082	MS-BH11	ES2	0.10 - 0.10	21/09/2022
26927091	MS-BH11	ES4	0.45 - 0.45	21/09/2022
26927098	MS-BH11	ES6	0.80 - 0.80	21/09/2022
26927105	MS-BH11	ES8	1.20 - 1.20	21/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26927/082	MS-BH11	ES2	0.10 - 0.10	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		26927/098	MS-BH11	ES6	0.80 - 0.80	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X		X		
Chromium III	All	NDPs: 0 Tests: 2	X		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 1			X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26927082	26927098				
	Customer Sample Reference	MS-BH11	MS-BH11				
	AGS Reference	ES2	ES2	ES6			
	Depth (m)	0.10 - 0.10	0.10 - 0.10	0.80 - 0.80			
	Container	1kg Tub with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg Tub with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S	S
pH	All	NDPs: 0 Tests: 2		X	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2		X	X		
Sample description	All	NDPs: 0 Tests: 2		X	X		
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1			X		
Total Organic Carbon	All	NDPs: 0 Tests: 2		X	X		
Total Sulphate	All	NDPs: 0 Tests: 2		X	X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X		
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26927082	MS-BH11	0.10 - 0.10	Light Brown	Sandy Clay Loam	Vegetation	None
26927098	MS-BH11	0.80 - 0.80	Dark Brown	Sandy Silt Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH11	MS-BH11			
#	ISO17025 accredited.		ADS4220915007	ADS4220915012			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09-24	09-25			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	22/09/2022	22/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-23	220927-23			
(F)	Trigger breach confirmed	SDG Ref	26927082	26927098			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES6			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	20	24			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	0.0125	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	4.34	4	#	#	
pH	1 pH Units	TM133	8.11	8.27	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	@ M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	@ M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	15.9	3.06			
Arsenic	<0.6 mg/kg	TM181	17.5	2.76	M	M	
Boron	<0.7 mg/kg	TM181	13.4	2.79	#	#	
Cadmium	<0.02 mg/kg	TM181	0.283	0.0427	M	M	
Chromium	<0.9 mg/kg	TM181	15.9	3.06	M	M	
Copper	<1.4 mg/kg	TM181	19.7	3.7	M	M	
Iron	<1000 mg/kg	TM181	24100	4330	#	#	
Lead	<0.7 mg/kg	TM181	72.5	8.95	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	24.2	3.84	M	M	
Selenium	<1 mg/kg	TM181	1.11	<1	#	#	
Zinc	<1.9 mg/kg	TM181	92.4	10.9	M	M	
Sulphate, Total	<48 mg/kg	TM221	294	84.5	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.00979	0.00282			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	2.37	0.36			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0427	<0.004	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	5.28	6.87			
EPH (C5-C40)	<35 mg/kg	TM415	<35	87.1			
EPH Surrogate % recovery**	%	TM415	94.4	94.8			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH11	MS-BH11			
#	ISO17025 accredited.		ADS4220915007	ADS4220915012			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09-24	09-25			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	22/09/2022	22/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-23	220927-23			
(F)	Trigger breach confirmed	SDG Ref	26927082	26927098			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES6			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	82.8	84.1			
Acenaphthene-d10 % recovery**	%	TM218	81.4	84.8			
Phenanthrene-d10 % recovery**	%	TM218	81.3	85.4			
Chrysene-d12 % recovery**	%	TM218	77.4	82.4			
Perylene-d12 % recovery**	%	TM218	73	79.4			
Naphthalene	<9 µg/kg	TM218	12	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	64.3	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	91.2	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	77.9	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	42.3	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	48.8	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	49.5	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	18.7	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	37.6	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	26.5	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	469	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH11			
#	ISO17025 accredited.		ADS4220915012			
M	mCERTS accredited.		0.80 - 0.80			
aq	Aqueous / settled sample.		Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.		21/09/2022			
tot.unfilt	Total / unfiltered sample.		09/25			
	* Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	22/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	220927-23			
(F)	Trigger breach confirmed	Date Sampled	26927098			
1-4*\$@	Sample deviation (see appendix)	Sample Time	ES6			
		Date Received				
		SDG Ref				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH11 ADS4220915012 0.80 - 0.80 Soil/Solid (S) 21/09/2022 09:25 22/09/2022 220927-23 26927098 ES6				
Component	LOD/Units	Method	AGS Reference				
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.								
#	ISO17025 accredited.	MS-BH11 ADS4220915012 0.80 - 0.80 Soil/Solid (S) 21/09/2022 09:25 22/09/2022 220927-23 26927098 ES6	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-4*§	Sample deviation (see appendix)									
Component	LOD/Units									
GRO Surrogate % recovery**	%	TM089	119							
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2520	#						
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	16600	#						
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	5720							
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	24900							
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	76400							
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	4270	#						
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	31500	#						
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	15600							
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000							
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	51600							
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	76400							
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50							
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20							



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH11	MS-BH11			
#	ISO17025 accredited.		ADS4220915007	ADS4220915012			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09-24	09-25			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	22/09/2022	22/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-23	220927-23			
(F)	Trigger breach confirmed	SDG Ref	26927082	26927098			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES6			
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	106	113			
Toluene-d8**	%	TM116	97.6	95.6			
4-Bromofluorobenzene**	%	TM116	90	83.7			
Dichlorodifluoromethane	<6 µg/kg	TM116		<60		#	
Chloromethane	<7 µg/kg	TM116		<70		#	
Vinyl Chloride	<6 µg/kg	TM116		<60		@ M	
Bromomethane	<10 µg/kg	TM116		<100		M	
Chloroethane	<10 µg/kg	TM116		<100		M	
Trichlorofluoromethane	<6 µg/kg	TM116		<60		M	
1,1-Dichloroethene	<10 µg/kg	TM116		<100		#	
Carbon Disulphide	<7 µg/kg	TM116		<70		M	
Dichloromethane	<10 µg/kg	TM116		<100		#	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<100		M	
trans-1,2-Dichloroethene	<10 µg/kg	TM116		<100		M	
1,1-Dichloroethane	<8 µg/kg	TM116		<80		M	
cis-1,2-Dichloroethene	<6 µg/kg	TM116		<60		M	
2,2-Dichloropropane	<10 µg/kg	TM116		<100			
Bromochloromethane	<10 µg/kg	TM116		<100		M	
Chloroform	<8 µg/kg	TM116		<80		M	
1,1,1-Trichloroethane	<7 µg/kg	TM116		<70		M	
1,1-Dichloropropene	<10 µg/kg	TM116		<100		M	
Carbontetrachloride	<10 µg/kg	TM116		<100		M	
1,2-Dichloroethane	<5 µg/kg	TM116		<50		M	
Benzene	<9 µg/kg	TM116	<90	<90		M	
Trichloroethene	<9 µg/kg	TM116		<90		#	
1,2-Dichloropropane	<10 µg/kg	TM116		<100		M	
Dibromomethane	<9 µg/kg	TM116		<90		M	
Bromodichloromethane	<7 µg/kg	TM116		<70		M	
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<100		M	
Toluene	<7 µg/kg	TM116	<70	<70		M	
trans-1,3-Dichloropropene	<10 µg/kg	TM116		<100			
1,1,2-Trichloroethane	<10 µg/kg	TM116		<100		M	
1,3-Dichloropropane	<7 µg/kg	TM116		<70		M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH11	MS-BH11			
#	ISO17025 accredited.		ADS4220915007	ADS4220915012			
M	mCERTS accredited.		0.10 - 0.10	0.80 - 0.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:24	09:25			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	22/09/2022	22/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Date Received	220927-23	220927-23			
(F)	Trigger breach confirmed	SDG Ref	26927082	26927098			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES6			
		AGS Reference					
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116		<50			M
Dibromochloromethane	<10 µg/kg	TM116		<100			M
1,2-Dibromoethane	<10 µg/kg	TM116		<100			M
Chlorobenzene	<5 µg/kg	TM116		<50			M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116		<100			M
Ethylbenzene	<4 µg/kg	TM116	<40	<40			M M
p/m-Xylene	<10 µg/kg	TM116	<100	<100			# #
o-Xylene	<10 µg/kg	TM116	<100	<100			M M
Styrene	<10 µg/kg	TM116		<100			@ #
Bromofom	<10 µg/kg	TM116		<100			M
Isopropylbenzene	<5 µg/kg	TM116		<50			#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116		<100			#
1,2,3-Trichloropropane	<16 µg/kg	TM116		<160			M
Bromobenzene	<10 µg/kg	TM116		<100			M
Propylbenzene	<10 µg/kg	TM116		<100			M
2-Chlorotoluene	<9 µg/kg	TM116		<90			M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116		<80			M
4-Chlorotoluene	<10 µg/kg	TM116		<100			M
tert-Butylbenzene	<14 µg/kg	TM116		<140			#
1,2,4-Trimethylbenzene	<9 µg/kg	TM116		<90			#
sec-Butylbenzene	<10 µg/kg	TM116		<100			
4-Isopropyltoluene	<10 µg/kg	TM116		<100			
1,3-Dichlorobenzene	<8 µg/kg	TM116		<80			M
1,4-Dichlorobenzene	<5 µg/kg	TM116		<50			M
n-Butylbenzene	<11 µg/kg	TM116		<110			
1,2-Dichlorobenzene	<10 µg/kg	TM116		<100			M
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116		<140			M
Tert-amyl methyl ether	<10 µg/kg	TM116		<100			#
1,2,4-Trichlorobenzene	<20 µg/kg	TM116		<200			
Hexachlorobutadiene	<20 µg/kg	TM116		<200			
Naphthalene	<13 µg/kg	TM116		<130			M
1,2,3-Trichlorobenzene	<20 µg/kg	TM116		<200			#
1,3,5-Trichlorobenzene	<20 µg/kg	TM116		<200			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH11ES2 0.10 - 0.10 SOLID 21/09/2022 00:00:00 22/09/2022 05:00:00 220927-23 26927082 TM048	04/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH11ES6 0.80 - 0.80 SOLID 21/09/2022 00:00:00 22/09/2022 05:00:00 220927-23 26927098 TM048	05/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-23
Client Ref.: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26927082	26927098
Customer Sample Ref.	MS-BH11	MS-BH11
AGS Ref.	ES2	ES6
Depth	0.10 - 0.10	0.80 - 0.80
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	30-Sep-2022	30-Sep-2022
Anions by Kone (soil)	04-Oct-2022	04-Oct-2022
Asbestos ID in Solid Samples	04-Oct-2022	05-Oct-2022
Chromium III	30-Sep-2022	30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	06-Oct-2022	05-Oct-2022
Easily Liberated Sulphide	28-Sep-2022	28-Sep-2022
Elemental Sulphur	04-Oct-2022	30-Sep-2022
EPH	04-Oct-2022	05-Oct-2022
EPH by GCxGC-FID	29-Sep-2022	29-Sep-2022
EPH CWG GC (S)		29-Sep-2022
GRO by GC-FID (S)	03-Oct-2022	04-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022	28-Sep-2022
Metals in solid samples by OES	30-Sep-2022	30-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022	04-Oct-2022
PAH by GCMS	29-Sep-2022	29-Sep-2022
pH	04-Oct-2022	04-Oct-2022
Phenols by HPLC (S)	29-Sep-2022	29-Sep-2022
Sample description	27-Sep-2022	27-Sep-2022
Semi Volatile Organic Compounds		30-Sep-2022
Total Organic Carbon	30-Sep-2022	30-Sep-2022
Total Sulphate	29-Sep-2022	29-Sep-2022
TPH CWG GC (S)		05-Oct-2022
VOC MS (S)	04-Oct-2022	04-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-23
Client Ref: F212561

Report Number: 663724
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	12 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220927-24
Your Reference:	F212561
Location:	Keadby 3
Report No:	664359
Order Number:	386/121917/CP

This report has been revised and directly supersedes 663763 in its entirety.

We received 2 samples on Thursday September 22, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday October 12, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

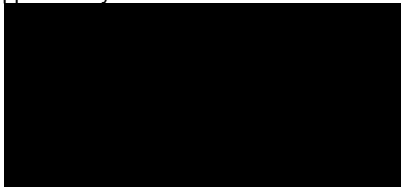
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26927116	MS-BH17	ES1	0.10 - 0.10	15/09/2022
26927123	MS-BH17	ES4	0.50 - 0.50	15/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26927123			
	Customer Sample Reference	MS-BH17			
	AGS Reference	ES4			
	Depth (m)	0.50 - 0.50			
	Container	Handle (ALE260)	1kg TUB with (ALE210)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S

Analyte	All	NDPs: 0 Tests: 1	X	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X			
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1	X			
Chromium III	All	NDPs: 0 Tests: 1	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

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SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	26927/123	MS-BH17	ES4	0.50 - 0.50	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
pH	All	NDPs: 0 Tests: 1	X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1			X	



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SDG: 220927-24
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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26927123	MS-BH17	0.50 - 0.50	Light Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Results Legend		Customer Sample Ref.		MS-BH17							
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		F-COLMUB-KG1A 0.50 - 0.50 Soil/Solid (S) 15/09/2022 14:33 22/09/2022 220927-24 26927123 ES4							
Component	LOD/Units	Method									
Moisture Content Ratio (% of as received sample)	%	PM024	8.8								
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15		M						
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12		M						
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		M						
Cresols	<0.01 mg/kg	TM062 (S)	<0.01		M						
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015		M						
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035		M						
Soil Organic Matter (SOM)	<0.35 %	TM132	4.83		#						
pH	1 pH Units	TM133	9.22		M						
Sulphur, Elemental	<10 mg/kg	TM136	67		M						
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		M						
Cyanide, Total	<1 mg/kg	TM153	<1		@ M						
Cyanide, Free	<1 mg/kg	TM153	<1		@ M						
Sulphide, Easily liberated	<15 mg/kg	TM180	72		@ M						
Chromium, Trivalent	<0.9 mg/kg	TM181	36								
Arsenic	<0.6 mg/kg	TM181	12.9		M						
Boron	<0.7 mg/kg	TM181	19.1		#						
Cadmium	<0.02 mg/kg	TM181	0.391		M						
Chromium	<0.9 mg/kg	TM181	36		M						
Copper	<1.4 mg/kg	TM181	29		M						
Iron	<1000 mg/kg	TM181	19600		#						
Lead	<0.7 mg/kg	TM181	36.2		M						
Mercury	<0.1 mg/kg	TM181	<0.1		M						
Nickel	<0.2 mg/kg	TM181	15.4		M						
Selenium	<1 mg/kg	TM181	1.99		#						
Zinc	<1.9 mg/kg	TM181	93.4		M						
Sulphate, Total	<48 mg/kg	TM221	4120		M						
Total Sulphur (ASB)	<0.0016 %	TM221	0.137								
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.39								
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.276		M						
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	15.4								
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304	<0.001		#						
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304	<0.001		#						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Results Legend	Customer Sample Ref.	MS-BH17 F-COLMUB-K5IA 0.50 - 0.50 Soil/Solid (S) 15/09/2022 14:33 22/09/2022 220927-24 26927123 ES4				
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Component	LOD/Units	Method				
Additional Asbestos Components (Using TM048)		TM304	None	#		
Analysts Comments		TM304	N/A			
Asbestos Quantification - Total - %	<0.001 %	TM304	<0.001	#		
EPH (C5-C40)	<35 mg/kg	TM415	248			
EPH Surrogate % recovery**	%	TM415	97.5			
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	248	M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

GRO by GC-FID (S)

Results Legend			Customer Sample Ref.	MS-BH17 F-COLMUB-K6IA 0.50 - 0.50 Soil/Solid (S) 15/09/2022 14:33 22/09/2022 220927-24 26927123 ES4				
Component	LOD/Units	Method						
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*#@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

PAH by GCMS

Results Legend		Customer Sample Ref.		MS-BH17					
#	ISO17025 accredited.				F-COLMUB-K6IA				
M	mCERTS accredited.				0.50 - 0.50				
aq	Aqueous / settled sample.				Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.				15/09/2022				
tot.unfilt	Total / unfiltered sample.				14:33				
	* Subcontracted - refer to subcontractor report for accreditation status.				22/09/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				220927-24				
(F)	Trigger breach confirmed				26927123				
1-4*\$@	Sample deviation (see appendix)				ES4				
Component	LOD/Units	Method							
Naphthalene-d8 % recovery**	%	TM218	84.3						
Acenaphthene-d10 % recovery**	%	TM218	94.7						
Phenanthrene-d10 % recovery**	%	TM218	93.2						
Chrysene-d12 % recovery**	%	TM218	91.8						
Perylene-d12 % recovery**	%	TM218	71.4						
Naphthalene	<9 µg/kg	TM218	158	@ M					
Acenaphthylene	<12 µg/kg	TM218	<120	@ M					
Acenaphthene	<8 µg/kg	TM218	<80	@ M					
Fluorene	<10 µg/kg	TM218	<100	@ M					
Phenanthrene	<15 µg/kg	TM218	924	@ M					
Anthracene	<16 µg/kg	TM218	442	@ M					
Fluoranthene	<17 µg/kg	TM218	2330	@ M					
Pyrene	<15 µg/kg	TM218	2340	@ M					
Benz(a)anthracene	<14 µg/kg	TM218	852	@ M					
Chrysene	<10 µg/kg	TM218	829	@ M					
Benzo(b)fluoranthene	<15 µg/kg	TM218	724	@ M					
Benzo(k)fluoranthene	<14 µg/kg	TM218	383	@ M					
Benzo(a)pyrene	<15 µg/kg	TM218	610	@ M					
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	489	@ M					
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<230	@ M					
Benzo(g,h,i)perylene	<24 µg/kg	TM218	377	@ M					
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	10500						



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
04/10/2022	Paul Poynton	Loose fibres in soil	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	MS-BH17ES4
Depth (m)	0.50 - 0.50
Sample Type	SOLID
Date Sampled	15/09/2022 00:00:00
Date Received	22/09/2022 05:00:00
SDG	220927-24
Original Sample	26927123
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Asbestos Quantification - Full

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	MS-BH17ES4	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.50 - 0.50					
Sample Type	SOLID					
Date Sampled	15/09/2022 00:00:00					
Date Received	22/09/2022 05:00:00					
SDG	220927-24					
Original Sample	26927123					
Method Number	TM304					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-24
Client Ref.: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Test Completion Dates

Lab Sample No(s)	26927123
Customer Sample Ref.	MS-BH17
AGS Ref.	ES4
Depth	0.50 - 0.50
Type	Soil/Solid (S)

Ammonium Soil by Titration	30-Sep-2022
Anions by Kone (soil)	04-Oct-2022
Asbestos ID in Solid Samples	04-Oct-2022
Asbestos Quantification - Full	12-Oct-2022
Chromium III	30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	04-Oct-2022
Easily Liberated Sulphide	06-Oct-2022
Elemental Sulphur	30-Sep-2022
EPH	04-Oct-2022
EPH by GCxGC-FID	29-Sep-2022
GRO by GC-FID (S)	04-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022
Metals in solid samples by OES	30-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022
PAH by GCMS	05-Oct-2022
pH	04-Oct-2022
Phenols by HPLC (S)	29-Sep-2022
Sample description	27-Sep-2022
Total Organic Carbon	30-Sep-2022
Total Sulphate	29-Sep-2022
VOC MS (S)	04-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-24
Client Ref: F212561

Report Number: 664359
Location: Keadby 3

Superseded Report: 663763

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220927-26
Your Reference:	F212561
Location:	Keadby 3
Report No:	663863
Order Number:	386/121917/CP

This report has been revised and directly supersedes 663846 in its entirety.

We received 4 samples on Saturday September 17, 2022 and 2 of these samples were scheduled for analysis which was completed on Friday October 07, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

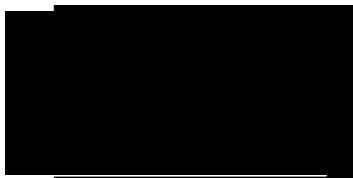
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26927136	MS-BH15	ES2	0.10 - 0.10	13/09/2022
26927155	MS-BH15	ES4	0.50 - 0.50	13/09/2022
26927147	MS-BH15	ES37	0.85 - 0.85	15/09/2022
26927163	MS-BH15	ES9	1.20 - 1.20	13/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center; font-size: 8px;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26927/155	MS-BH15	ES4	0.50 - 0.50	1.20 - 1.20	S
		26927/163	MS-BH15	ES9	1.20 - 1.20	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X		X		
Chromium III	All	NDPs: 0 Tests: 2	X		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X		
pH	All	NDPs: 0 Tests: 2	X		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Results Legend							
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	Lab Sample No(s)	26927155	26927163				
	Customer Sample Reference	MS-BH15	MS-BH15				
	AGS Reference	ES4	ES9				
	Depth (m)	0.50 - 0.50	1.20 - 1.20				
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X		
Sample description	All	NDPs: 0 Tests: 2	X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X		
Total Sulphate	All	NDPs: 0 Tests: 2	X		X		
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26927155	MS-BH15	0.50 - 0.50	Light Brown	Sandy Loam	Vegetation	None
26927163	MS-BH15	1.20 - 1.20	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Results Legend		Customer Sample Ref.	MS-BH15	MS-BH15			
#	ISO17025 accredited.		ADS4220912005	ADS4220912010			
M	mCERTS accredited.		0.50 - 0.50	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	13/09/2022	13/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:13	12:13			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-26	220927-26			
(F)	Trigger breach confirmed	SDG Ref	26927165	26927163			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES9			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	17	8			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	2.95 #	<0.35 #			
pH	1 pH Units	TM133	8.07 M	8.41 M			
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	7.67	4.55			
Arsenic	<0.6 mg/kg	TM181	4.7 M	2.96 M			
Boron	<0.7 mg/kg	TM181	5.03 #	1.02 #			
Cadmium	<0.02 mg/kg	TM181	0.055 M	0.0434 M			
Chromium	<0.9 mg/kg	TM181	7.67 M	4.55 M			
Copper	<1.4 mg/kg	TM181	3.61 M	3.43 M			
Iron	<1000 mg/kg	TM181	6830 #	3510 #			
Lead	<0.7 mg/kg	TM181	17.2 M	5.21 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	6.99 M	6.31 M			
Selenium	<1 mg/kg	TM181	<1 #	<1 #			
Zinc	<1.9 mg/kg	TM181	22.8 M	14.1 M			
Sulphate, Total	<48 mg/kg	TM221	475 M	<48 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0158	<0.0016			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.28	0.13			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.198 M	0.0344 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.29	1.47			
EPH (C5-C40)	<35 mg/kg	TM415	74.5	<35			
EPH Surrogate % recovery**	%	TM415	97	89.5			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH15	MS-BH15			
#	ISO17025 accredited.		ADS4220912005	ADS4220912010			
M	mCERTS accredited.		0.50 - 0.50	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.filt	Dissolved / filtered sample.	Sample Type	13/09/2022	13/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:13	12:13			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-26	220927-26			
(F)	Trigger breach confirmed	SDG Ref	26927165	26927163			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES9			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	88.5	91.6			
Acenaphthene-d10 % recovery**	%	TM218	91.4	96.3			
Phenanthrene-d10 % recovery**	%	TM218	95.9	107			
Chrysene-d12 % recovery**	%	TM218	95.9	95.8			
Perylene-d12 % recovery**	%	TM218	93.5	82.6			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH15	MS-BH15			
#	ISO17025 accredited.		ADS4220912005	ADS4220912010			
M	mCERTS accredited.		0.50 - 0.50	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	13/09/2022	13/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:13	12:13			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/09/2022	17/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-26	220927-26			
(F)	Trigger breach confirmed	SDG Ref	26927165	26927163			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES9			
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	110	101			
			@	@			
Toluene-d8**	%	TM116	101	98.1			
			@	@			
4-Bromofluorobenzene**	%	TM116	87.3	99.2			
			@	@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<10			
			@ M	@ M			
Benzene	<9 µg/kg	TM116	<90	<9			
			@ M	@ M			
Toluene	<7 µg/kg	TM116	<70	<7			
			@ M	@ M			
Ethylbenzene	<4 µg/kg	TM116	<40	<4			
			@ M	@ M			
p/m-Xylene	<10 µg/kg	TM116	<100	<10			
			@ #	@ #			
o-Xylene	<10 µg/kg	TM116	<100	<10			
			@ M	@ M			
Sum of BTEX	<40 µg/kg	TM116	<400	<40			
			@	@			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH15ES4 0.50 - 0.50 SOLID 13/09/2022 00:00:00 17/09/2022 05:00:00 220927-26 26927155 TM048	05/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH15ES9 1.20 - 1.20 SOLID 13/09/2022 00:00:00 17/09/2022 05:00:00 220927-26 26927163 TM048	04/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-26
Client Ref.: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Test Completion Dates

Lab Sample No(s)	26927155	26927163
Customer Sample Ref.	MS-BH15	MS-BH15
AGS Ref.	ES4	ES9
Depth	0.50 - 0.50	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	30-Sep-2022	30-Sep-2022
Anions by Kone (soil)	04-Oct-2022	04-Oct-2022
Asbestos ID in Solid Samples	05-Oct-2022	04-Oct-2022
Chromium III	30-Sep-2022	30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	06-Oct-2022	06-Oct-2022
Easily Liberated Sulphide	06-Oct-2022	28-Sep-2022
Elemental Sulphur	30-Sep-2022	04-Oct-2022
EPH	05-Oct-2022	05-Oct-2022
EPH by GCxGC-FID	29-Sep-2022	29-Sep-2022
GRO by GC-FID (S)	04-Oct-2022	04-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022	28-Sep-2022
Metals in solid samples by OES	30-Sep-2022	30-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022	04-Oct-2022
PAH by GCMS	07-Oct-2022	05-Oct-2022
pH	04-Oct-2022	04-Oct-2022
Phenols by HPLC (S)	29-Sep-2022	29-Sep-2022
Sample description	27-Sep-2022	27-Sep-2022
Total Organic Carbon	30-Sep-2022	30-Sep-2022
Total Sulphate	29-Sep-2022	29-Sep-2022
VOC MS (S)	05-Oct-2022	04-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-26
Client Ref: F212561

Report Number: 663863
Location: Keadby 3

Superseded Report: 663846

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 06 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 220927-27
Your Reference: F212561
Location: Keadby 3
Report No: 663761
Order Number: 386/121917/CP

This report has been revised and directly supersedes 663734 in its entirety.

We received 8 samples on Saturday September 24, 2022 and 3 of these samples were scheduled for analysis which was completed on Thursday October 06, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26927183	BH101	ES1	0.20 - 0.20	21/09/2022
26927228	BH101	ES4	0.50 - 0.50	21/09/2022
26927236	BH101	ES7	1.00 - 1.00	21/09/2022
26927245	BH101	ES8	1.20 - 1.20	21/09/2022
26927193	BH101	ES10	1.80 - 1.80	21/09/2022
26927202	BH101	ES12	2.80 - 2.80	21/09/2022
26927210	BH101	ES15	3.80 - 3.80	21/09/2022
26927221	BH101	ES18	4.80 - 4.80	21/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26927183	BH101	ES1	0.20 - 0.20	250g Amber Jar (ALE210)	S
		26927202	BH101	ES12	2.80 - 2.80	1kg TUB with Handle (ALE260)	S
		26927221	BH101	ES18	4.80 - 4.80	250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

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SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	
	26927183	BH101	ES1	0.20 - 0.20	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	S
	26927202	BH101	ES12	2.80 - 2.80	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	S
	26927221	BH101	ES18	4.80 - 4.80	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	S
pH	All	NDPs: 0 Tests: 3						
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3						
Sample description	All	NDPs: 0 Tests: 3						
Total Organic Carbon	All	NDPs: 0 Tests: 3						
Total Sulphate	All	NDPs: 0 Tests: 3						
TPH CWG GC (S)	All	NDPs: 0 Tests: 1						
VOC MS (S)	All	NDPs: 0 Tests: 3						



CERTIFICATE OF ANALYSIS

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SDG: 220927-27
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Location: Keadby 3

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26927183	BH101	0.20 - 0.20	Light Brown	Sandy Loam	Stones	Vegetation
26927202	BH101	2.80 - 2.80	Dark Brown	Silt Loam	None	None
26927221	BH101	4.80 - 4.80	Dark Brown	Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Results Legend		Customer Sample Ref.		BH101	BH101	BH101		
# ISO17025 accredited.				F-QB&ZUB-TLCQ	F-Q4EZUB-SYDR	F-F9FZUB-U6S1		
M mCERTS accredited.				0.20 - 0.20	2.80 - 2.80	4.80 - 4.80		
aq Aqueous / settled sample.		Depth (m)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.fltr Dissolved / filtered sample.		Sample Type		21/09/2022	21/09/2022	21/09/2022		
tot.unfltr Total / unfiltered sample.		Date Sampled		11:36	13:18	13:45		
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		24/09/2022	24/09/2022	24/09/2022		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		220927-27	220927-27	220927-27		
(F) Trigger breach confirmed		SDG Ref		26927183	26927202	26927221		
1-4*§ Sample deviation (see appendix)		Lab Sample No.(s)		ES1	ES12	ES18		
		AGS Reference						
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	12	20	21			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M			
Soil Organic Matter (SOM)	<0.35 %	TM132	9.09 #	19.5 #	20.2 #			
pH	1 pH Units	TM133	8.32 M	8.44 M	8.45 M			
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M			
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	19.5	35	34.8			
Arsenic	<0.6 mg/kg	TM181	34.9 M	121 M	122 M			
Boron	<0.7 mg/kg	TM181	14 #	29.4 #	29.4 #			
Cadmium	<0.02 mg/kg	TM181	0.214 M	0.15 M	0.14 M			
Chromium	<0.9 mg/kg	TM181	19.5 M	35 M	34.8 M			
Copper	<1.4 mg/kg	TM181	37.8 M	86.5 M	85.8 M			
Iron	<1000 mg/kg	TM181	25300 #	26500 #	26200 #			
Lead	<0.7 mg/kg	TM181	67.2 M	50.6 M	49.2 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	30.3 M	44.8 M	43.5 M			
Selenium	<1 mg/kg	TM181	1.19 #	2.48 #	2.37 #			
Zinc	<1.9 mg/kg	TM181	85.9 M	57.2 M	52.2 M			
Sulphate, Total	<48 mg/kg	TM221	129 M	162 M	162 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.00431	0.00539	0.00541			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.91	0.13	0.13			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	<0.004 M	0.0271 M	0.0306 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	29.3	4.91	5.62			
EPH (C5-C40)	<35 mg/kg	TM415	59.7	136	151			
EPH Surrogate % recovery**	%	TM415	90.3	93.3	89.2			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Results Legend		Customer Sample Ref.	BH101					
			F-QB8ZUB-TLCQ	F-Q4EZUB-SYDR	F-F9FZUB-U6S1			
# ISO17025 accredited.		Depth (m)	0.20 - 0.20	2.80 - 2.80	4.80 - 4.80			
M mCERTS accredited.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
sq Aqueous / settled sample.		Date Sampled	21/09/2022	21/09/2022	21/09/2022			
dis.filt Dissolved / filtered sample.		Sample Time	11:36	13:18	13:45			
tot.unfilt Total / unfiltered sample.		Date Received	24/09/2022	24/09/2022	24/09/2022			
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref	220927-27	220927-27	220927-27			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)	26927183	26927202	26927221			
(F) Trigger breach confirmed		AGS Reference	ES1	ES12	ES18			
1-4*% Sample deviation (see appendix)								
Component	LOD/Units	Method						
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	59.7	136	151	M	M	M



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

PAH by GCMS

Results Legend		Customer Sample Ref.	BH101	BH101	BH101		
#	ISO17025 accredited.		F-QB8ZUB-TLCQ	F-Q4EZUB-SYDR	F-F9FZUB-U6S1		
M	mCERTS accredited.		0.20 - 0.20	2.80 - 2.80	4.80 - 4.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022	21/09/2022	21/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:36	13:18	13:45		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	24/09/2022	24/09/2022	24/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220927-27	220927-27	220927-27		
	(F) Trigger breach confirmed	SDG Ref	26927183	26927202	26927221		
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES1	ES12	ES18		
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	81.8	64.4	55.4		
Acenaphthene-d10 % recovery**	%	TM218	86.9	61.6	53.5		
Phenanthrene-d10 % recovery**	%	TM218	87.5	23	16.7		
Chrysene-d12 % recovery**	%	TM218	63.8	2.25	1.17		
Perylene-d12 % recovery**	%	TM218	38.7	0.62	0.32		
Naphthalene	<9 µg/kg	TM218	<9	14.6	21.4		
			@ M	M	@ M		
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12		
			@ M	M	@ M		
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8		
			@ M	M	@ M		
Fluorene	<10 µg/kg	TM218	<10	<10	<10		
			@ M	M	@ M		
Phenanthrene	<15 µg/kg	TM218	37.4	<15	<15		
			@ M	M	@ M		
Anthracene	<16 µg/kg	TM218	<16	<16	<16		
			@ M	M	@ M		
Fluoranthene	<17 µg/kg	TM218	39.9	<17	<17		
			@ M	M	@ M		
Pyrene	<15 µg/kg	TM218	36.4	<15	<15		
			@ M	M	@ M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14		
			@ M	M	@ M		
Chrysene	<10 µg/kg	TM218	21.8	<10	<10		
			@ M	M	@ M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	22	<15	<15		
			@ M	M	@ M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14		
			@ M	M	@ M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15		
			@ M	M	@ M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18		
			@ M	M	@ M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23		
			@ M	M	@ M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24		
			@ M	M	@ M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	158	<118	<118		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

TPH CWG (S)

Results Legend		Customer Sample Ref.		BH101	
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-Q4EZUB-SYDR 2.80 - 2.80 Soil/Solid (S) 21/09/2022 13:18 24/09/2022 220927-27 26927202 ES12		
M	mCERTS accredited.				
aq	Aqueous / settled sample.				
dis.sol	Dissolved / filtered sample.				
tot.unfilt	Total / unfiltered sample.				
*	Subcontracted - refer to subcontractor report for accreditation status.				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				
(F)	Trigger breach confirmed				
1-4*#	Sample deviation (see appendix)				
Component	LOD/Units			Method	
GRO Surrogate % recovery**	%	TM089	18.6		
			4 @		
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10		
			4 @		
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10		
			4 @		
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10		
			4 @		
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000		
			#		
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1580		
			#		
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	21500		
			#		
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	92700		
			#		
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	17600		
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	133000		
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	158000		
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10		
			4 @		
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10		
			4 @		
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10		
			4 @		
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000		
			#		
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000		
			#		
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1520		
			#		
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	21900		
			#		
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1310		
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000		
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	25000		
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	158000		
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50		
			4 @		
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50		
			4 @		
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20		
			4 @		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27

Report Number: 663761

Superseded Report:

663734

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend		Customer Sample Ref.	BH101					
# ISO17025 accredited.	M mCERTS accredited.		F-QB8ZUB-TLCQ	F-Q4EZUB-SYDR	F-F9FZUB-U6S1			
aq Aqueous / settled sample.		0.20 - 0.20	2.80 - 2.80	4.80 - 4.80				
dis.s.filter Dissolved / filtered sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)				
tot.unfilr Total / unfiltered sample.		21/09/2022	21/09/2022	21/09/2022				
* Subcontracted - refer to subcontractor report for accreditation status.		11:36	13:18	13:45				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.		24/09/2022	24/09/2022	24/09/2022				
(F) Trigger breach confirmed		220927-27	220927-27	220927-27				
1-4*%@ Sample deviation (see appendix)		26927183	26927202	26927221				
		Lab Sample No.(s) ES1	ES12	ES18				
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	112	109	108			
Toluene-d8**	%	TM116	102	100	96.9			
4-Bromofluorobenzene**	%	TM116	91.7	101	79.7			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<2000	<200			
			M	M	M			
Benzene	<9 µg/kg	TM116	<180	<1800	<180			
			M	M	M			
Toluene	<7 µg/kg	TM116	<140	<1400	<140			
			M	M	M			
Ethylbenzene	<4 µg/kg	TM116	<80	<800	<80			
			M	M	M			
p/m-Xylene	<10 µg/kg	TM116	<200	<2000	<200			
			#	#	#			
o-Xylene	<10 µg/kg	TM116	<200	<2000	<200			
			M	M	M			
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<4				
Sum of BTEX	<40 µg/kg	TM116	<800	<8000	<800			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH101ES12 2.80 - 2.80 SOLID 21/09/2022 00:00:00 24/09/2022 05:00:00 220927-27 26927202 TM048	04/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH101ES18 4.80 - 4.80 SOLID 21/09/2022 00:00:00 24/09/2022 05:00:00 220927-27 26927221 TM048	04/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220927-27
Client Ref.: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Test Completion Dates

Lab Sample No(s)	26927183	26927202	26927221
Customer Sample Ref.	BH101	BH101	BH101
AGS Ref.	ES1	ES12	ES18
Depth	0.20 - 0.20	2.80 - 2.80	4.80 - 4.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	30-Sep-2022	30-Sep-2022	30-Sep-2022
Anions by Kone (soil)	04-Oct-2022	04-Oct-2022	04-Oct-2022
Asbestos ID in Solid Samples		04-Oct-2022	04-Oct-2022
Chromium III	30-Sep-2022	30-Sep-2022	30-Sep-2022
Cyanide Comp/Free/Total/Thiocyanate	06-Oct-2022	06-Oct-2022	06-Oct-2022
Easily Liberated Sulphide	03-Oct-2022	06-Oct-2022	06-Oct-2022
Elemental Sulphur	30-Sep-2022	04-Oct-2022	04-Oct-2022
EPH	05-Oct-2022	06-Oct-2022	05-Oct-2022
EPH by GCxGC-FID	29-Sep-2022	29-Sep-2022	29-Sep-2022
EPH CWG GC (S)		29-Sep-2022	
GRO by GC-FID (S)	04-Oct-2022	06-Oct-2022	05-Oct-2022
Hexavalent Chromium (s)	28-Sep-2022	28-Sep-2022	28-Sep-2022
Metals in solid samples by OES	30-Sep-2022	30-Sep-2022	30-Sep-2022
NO3, NO2 and TON by KONE (s)	04-Oct-2022	04-Oct-2022	04-Oct-2022
PAH by GCMS	06-Oct-2022	04-Oct-2022	06-Oct-2022
pH	27-Sep-2022	04-Oct-2022	04-Oct-2022
Phenols by HPLC (S)	29-Sep-2022	29-Sep-2022	29-Sep-2022
Sample description	27-Sep-2022	27-Sep-2022	27-Sep-2022
Total Organic Carbon	30-Sep-2022	30-Sep-2022	30-Sep-2022
Total Sulphate	29-Sep-2022	29-Sep-2022	29-Sep-2022
TPH CWG GC (S)		06-Oct-2022	
VOC MS (S)	05-Oct-2022	05-Oct-2022	04-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220927-27
Client Ref: F212561

Report Number: 663761
Location: Keadby 3

Superseded Report: 663734

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	11 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220930-150
Your Reference:	F212561
Location:	Keadby 3
Report No:	664234
Order Number:	386/121917/CP

We received 14 samples on Wednesday September 28, 2022 and 1 of these samples were scheduled for analysis which was completed on Tuesday October 11, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

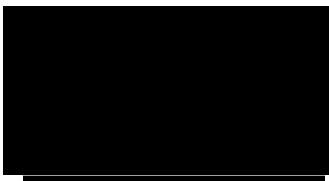
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26952631	BH101	ES31	10.80 - 10.80	21/09/2022
26952640	BH101	ES33	11.80 - 11.80	21/09/2022
26952648	BH101	ES34	12.80 - 12.80	22/09/2022
26952658	BH101	ES36	13.80 - 13.80	22/09/2022
26952666	BH101	ES37	14.80 - 14.80	22/09/2022
26952675	BH101	ES39	15.80 - 15.80	22/09/2022
26952683	BH101	ES41	16.80 - 16.80	22/09/2022
26952692	BH101	ES42	17.80 - 17.80	22/09/2022
26952699	BH101	ES44	18.80 - 18.80	22/09/2022
26952611	BH101	ES20	5.80 - 5.80	21/09/2022
26952706	BH101	ES22	6.80 - 6.80	21/09/2022
26952714	BH101	ES24	7.80 - 7.80	21/09/2022
26952722	BH101	ES27	8.80 - 8.80	21/09/2022
26952622	BH101	ES29	9.80 - 9.80	21/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> <p>Sample Types -</p> <ul style="list-style-type: none"> S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other 	Lab Sample No(s)		26962722			
	Customer Sample Reference		BH101			
	AGS Reference		ES27			
	Depth (m)		8.80 - 8.80			
	Container		60g VOC (ALE215)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	
	Sample Type		S	S	S	

Analyte	All	NDPs: 0 Tests: 1			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="border: 1px solid black; background-color: yellow; width: 15px; height: 15px; margin-right: 5px;"></div> X Test </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="border: 1px solid black; background-color: red; color: white; width: 15px; height: 15px; margin-right: 5px;"></div> N No Determination Possible </div> <p>Sample Types -</p> <ul style="list-style-type: none"> S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other 	Lab Sample No(s)				26952722
	Customer Sample Reference				BH101
	AGS Reference				ES27
	Depth (m)				8.80 - 8.80
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type	S	S	S	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X		
Sample description	All	NDPs: 0 Tests: 1	X		
Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
Total Sulphate	All	NDPs: 0 Tests: 1	X		
VOC MS (S)	All	NDPs: 0 Tests: 1		X	



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Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26952722	BH101	8.80 - 8.80	Dark Brown	Silt Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH101 F-TQ06VB-ZD7S 8.80 - 8.80 Soil/Solid (S) 21/09/2022 15:14 28/09/2022 220930-150 26952722 ES27					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	22				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	17.2	#			
pH	1 pH Units	TM133	8.65	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	@ M			
Cyanide, Free	<1 mg/kg	TM153	<1	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	31.6				
Arsenic	<0.6 mg/kg	TM181	117	M			
Boron	<0.7 mg/kg	TM181	37.1	#			
Cadmium	<0.02 mg/kg	TM181	0.145	M			
Chromium	<0.9 mg/kg	TM181	31.6	M			
Copper	<1.4 mg/kg	TM181	87.6	M			
Iron	<1000 mg/kg	TM181	32600	#			
Lead	<0.7 mg/kg	TM181	49.1	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	44.7	M			
Selenium	<1 mg/kg	TM181	3.44	#			
Zinc	<1.9 mg/kg	TM181	51.2	M			
Sulphate, Total	<48 mg/kg	TM221	675	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0225				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0433	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1				
EPH (C5-C40)	<35 mg/kg	TM415	166				
EPH Surrogate % recovery**	%	TM415	96.4				



CERTIFICATE OF ANALYSIS

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.							
#	ISO17025 accredited.		BH101						
M	mCERTS accredited.		F-TCQ6VB-ZD7S						
aq	Aqueous / settled sample.		8.80 - 8.80						
diss.filt	Dissolved / filtered sample.		Soil/Solid (S)						
tot.unfilt	Total / unfiltered sample.		21/09/2022						
	* Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	15.14						
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	28/09/2022						
(F)	Trigger breach confirmed	Date Sampled	220930-150						
1-4*#@	Sample deviation (see appendix)	Sample Time	26952722						
		Date Received	ES27						
		SDG Ref							
		Lab Sample No.(s)							
		AGS Reference							
Component	LOD/Units	Method							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	4 @					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	BH101				
#	ISO17025 accredited.		F-TCQ6VB-ZD7S				
M	mCERTS accredited.		8.80 - 8.80				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	21/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:14				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	28/09/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220930-150				
(F)	Trigger breach confirmed	SDG Ref	26952722				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES27				
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	52.8				
Acenaphthene-d10 % recovery**	%	TM218	53.9				
Phenanthrene-d10 % recovery**	%	TM218	8.23				
Chrysene-d12 % recovery**	%	TM218	0.37				
Perylene-d12 % recovery**	%	TM218	0.1				
Naphthalene	<9 µg/kg	TM218	31.6	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150

Report Number: 664234

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend		Customer Sample Ref.					
#	ISO17025 accredited.		BH101				
M	mCERTS accredited.		F-TCQ6VB-ZD7S				
aq	Aqueous / settled sample.		8.80 - 8.80				
diss.filt	Dissolved / filtered sample.		Soil/Solid (S)				
tot.unfilt	Total / unfiltered sample.		21/09/2022				
	* Subcontracted - refer to subcontractor report for accreditation status.		15:14				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		28/09/2022				
	(F) Trigger breach confirmed		220930-150				
	1-4*\$@ Sample deviation (see appendix)		26952722				
			ES27				
			Lab Sample No.(s)				
			AGS Reference				
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	127	@			
Toluene-d8**	%	TM116	90.9	@			
4-Bromofluorobenzene**	%	TM116	74.3	@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M			
Benzene	<9 µg/kg	TM116	<180	@ M			
Toluene	<7 µg/kg	TM116	<140	@ M			
Ethylbenzene	<4 µg/kg	TM116	<80	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	@ #			
o-Xylene	<10 µg/kg	TM116	<200	@ M			
Sum of BTEX	<40 µg/kg	TM116	<800	@			



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
11/10/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	BH101ES27
Depth (m)	8.80 - 8.80
Sample Type	SOLID
Date Sampled	21/09/2022 00:00:00
Date Received	28/09/2022 05:00:00
SDG	220930-150
Original Sample	26952722
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-150
Client Ref.: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26952722
Customer Sample Ref.	BH101
AGS Ref.	ES27
Depth	8.80 - 8.80
Type	Soil/Solid (S)

Ammonium Soil by Titration	06-Oct-2022
Anions by Kone (soil)	10-Oct-2022
Asbestos ID in Solid Samples	11-Oct-2022
Chromium III	07-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	07-Oct-2022
Easily Liberated Sulphide	11-Oct-2022
Elemental Sulphur	11-Oct-2022
EPH	11-Oct-2022
EPH by GCxGC-FID	06-Oct-2022
GRO by GC-FID (S)	11-Oct-2022
Hexavalent Chromium (s)	05-Oct-2022
Metals in solid samples by OES	07-Oct-2022
NO3, NO2 and TON by KONE (s)	10-Oct-2022
PAH by GCMS	10-Oct-2022
pH	07-Oct-2022
Phenols by HPLC (S)	06-Oct-2022
Sample description	04-Oct-2022
Total Organic Carbon	10-Oct-2022
Total Sulphate	06-Oct-2022
VOC MS (S)	10-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220930-150
Client Ref: F212561

Report Number: 664234
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	13 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	220930-153
Your Reference:	F212561
Location:	Keadby 3
Report No:	664653
Order Number:	386/121917/CP

We received 20 samples on Friday September 30, 2022 and 3 of these samples were scheduled for analysis which was completed on Thursday October 13, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26952844	BH102	ES1	0.10 - 0.10	27/09/2022
26952924	BH102	ES4	0.50 - 0.50	27/09/2022
26952939	BH102	ES6	1.00 - 1.00	27/09/2022
26952947	BH102	ES7	1.20 - 1.20	27/09/2022
26952966	BH102	ES9	1.80 - 1.80	27/09/2022
26953021	BH102	ES30	10.80 - 10.80	28/09/2022
26952857	BH102	ES31	11.80 - 11.80	28/09/2022
26952865	BH102	ES33	12.80 - 12.80	28/09/2022
26952876	BH102	ES34	13.80 - 13.80	28/09/2022
26952887	BH102	ES36	14.80 - 14.80	28/09/2022
26952902	BH102	ES38	15.80 - 15.80	28/09/2022
26952910	BH102	ES39	16.80 - 16.80	28/09/2022
26952931	BH102	ES44	18.80 - 18.80	28/09/2022
26952957	BH102	ES11	2.80 - 2.80	27/09/2022
26952975	BH102	ES13	3.80 - 3.80	27/09/2022
26952984	BH102	ES17	4.80 - 4.80	27/09/2022
26952991	BH102	ES19	5.80 - 5.80	27/09/2022
26952999	BH102	ES23	7.80 - 7.80	28/09/2022
26953006	BH102	ES24	8.80 - 8.80	28/09/2022
26953013	BH102	ES28	9.80 - 9.80	28/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



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SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
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Superseded Report:

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container			Sample Type				
	X Test	N No Determination Possible							1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S				
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other			26952939		BH102		ES6		1.00 - 1.00		14.80 - 14.80		9.80 - 9.80		60g VOC (ALE215)	S
															250g Amber Jar (ALE210)	S
															1kg TUB with Handle (ALE260)	S
															250g Amber Jar (ALE210)	S
															1kg TUB with Handle (ALE260)	S
															60g VOC (ALE215)	S
															1kg TUB with Handle (ALE260)	S
															250g Amber Jar (ALE210)	S
															1kg TUB with Handle (ALE260)	S
															60g VOC (ALE215)	S
Ammonium Low	All	NDPs: 0 Tests: 2	X								X					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3		X					X					X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 3		X					X					X		
Anions by Kone (w)	All	NDPs: 0 Tests: 2	X										X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	X				X				X			X		
CEN Readings	All	NDPs: 0 Tests: 2	X										X			
Chromium III	All	NDPs: 0 Tests: 5	X	X					X				X	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3		X					X					X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2	X										X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2	X										X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3		X					X					X		
Elemental Sulphur	All	NDPs: 0 Tests: 3		X					X					X		
EPH	All	NDPs: 0 Tests: 3		X					X					X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3		X					X					X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					X				X				X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26952939	BH102	ES6	1.00 - 1.00	1kg TUB with Handle (ALE260)	S
		26952887	BH102	ES36	14.80 - 14.80	250g Amber Jar (ALE210)	S
		26953013	BH102	ES28	9.80 - 9.80	1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE215)	S
						60g VOC (ALE215)	S
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2					
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2					
Mercury Dissolved	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					
PAH by GCMS	All	NDPs: 0 Tests: 3					
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2					
pH	All	NDPs: 0 Tests: 3					
pH Value of Filtered Water	All	NDPs: 0 Tests: 2					
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3					
Sample description	All	NDPs: 0 Tests: 3					
Total Organic Carbon	All	NDPs: 0 Tests: 3					
Total Sulphate	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	26952939	26952887	26953013		
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	Customer Sample Reference	BH102	BH102	BH102		
	AGS Reference	ES6	ES36	ES28		
	Depth (m)	1.00 - 1.00	14.80 - 14.80	9.80 - 9.80		
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S
	VOC MS (S)	All	NDPs: 0 Tests: 3	X	X	X



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Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26952887	BH102	14.80 - 14.80	Dark Brown	Silt Loam	Stones	None
26952939	BH102	1.00 - 1.00	Dark Brown	Sandy Silt Loam	Stones	Vegetation
26953013	BH102	9.80 - 9.80	Dark Brown	Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH102	BH102	BH102		
#	ISO17025 accredited.		F-3HJ8VB-9YU0	F-LMOAVB-1LL7	F-2GOAVB-SGGC		
M	mCERTS accredited.		1.00 - 1.00	14.80 - 14.80	9.80 - 9.80		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.flit	Dissolved / filtered sample.	Sample Type	27/09/2022	28/09/2022	28/09/2022		
tot.unflit	Total / unfiltered sample.	Date Sampled	11:48	15:35	15:31		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/09/2022	30/09/2022	30/09/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220930-153	220930-153	220930-153		
(F)	Trigger breach confirmed	SDG Ref	26952939	26952887	26953013		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES36	ES28		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	16	28	22		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132	22.6 #	15.7 #	16.8 #		
pH	1 pH Units	TM133	8.27 M	8.56 M	8.55 M		
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	18.1 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M		
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 ♦ M	<15 ♦ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	34.8	37.6	32.2		
Arsenic	<0.6 mg/kg	TM181	149 M	115 M	114 M		
Boron	<0.7 mg/kg	TM181	23.8 #	58.6 #	33 #		
Cadmium	<0.02 mg/kg	TM181	0.195 M	0.195 M	0.156 M		
Chromium	<0.9 mg/kg	TM181	34.8 M	37.6 M	32.2 M		
Copper	<1.4 mg/kg	TM181	92.6 M	87.9 M	88.8 M		
Iron	<1000 mg/kg	TM181	46400 #	29800 #	32500 #		
Lead	<0.7 mg/kg	TM181	51.5 M	53.7 M	48.3 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	61.5 M	47.6 M	47.3 M		
Selenium	<1 mg/kg	TM181	3.61 #	3.03 #	6.29 #		
Zinc	<1.9 mg/kg	TM181	64.1 M	60.4 M	52.9 M		
Sulphate, Total	<48 mg/kg	TM221	202 M	535 M	454 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.00674	0.0178	0.0151		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1	0.12	<0.1		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0242 M	0.079 M	0.0461 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	7.49	<1	4.15		
EPH (C5-C40)	<35 mg/kg	TM415	81.6	131	<35		
EPH Surrogate % recovery**	%	TM415	97.7	100	92.9		



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SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH102	BH102	BH102			
#	ISO17025 accredited.		BH102	BH102	BH102			
M	mCERTS accredited.		F-3HJ8VB-9YU0	F-LMOAVB-1LL7	F-2GOAVB-SGGC			
AQ	Aqueous / settled sample.		1.00 - 1.00	14.80 - 14.80	9.80 - 9.80			
dis.filt	Dissolved / filtered sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
tot.unfilt	Total / unfiltered sample.	Sample Type	27/09/2022	28/09/2022	28/09/2022			
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	11:48	15:35	15:31			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	30/09/2022	30/09/2022	30/09/2022			
(F)	Trigger breach confirmed	Date Received	220930-153	220930-153	220930-153			
1-4*@\$	Sample deviation (see appendix)	SDG Ref	26952939	26952887	26953013			
		Lab Sample No.(s)	ES6	ES36	ES28			
		AGS Reference						
Component	LOD/Units	Method						
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	81.6	131	<35			
			M	M	M			



CERTIFICATE OF ANALYSIS

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SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	BH102	BH102	BH102			
#	ISO17025 accredited.		F-3HU8VB-9YU0	F-LMOAVB-1LL7	F-2GOAVB-SGGC			
M	mCERTS accredited.		1.00 - 1.00	14.80 - 14.80	9.80 - 9.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:48	15:35	15:31			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/09/2022	30/09/2022	30/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Date Received	220930-153	220930-153	220930-153			
	(F) Trigger breach confirmed	SDG Ref	26952939	26952887	26953013			
	1-4*#@ Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES36	ES28			
		AGS Reference						
Component	LOD/Units	Method						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	<20	<20	4	4	4



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	BH102	BH102	BH102			
#	ISO17025 accredited.		F-3HJ8VB-9YU0	F-LMOAVB-1LL7	F-2GOAVB-SGGC			
M	mCERTS accredited.		1.00 - 1.00	14.80 - 14.80	9.80 - 9.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:48	15:35	15:31			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/09/2022	30/09/2022	30/09/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	220930-153	220930-153	220930-153			
	(F) Trigger breach confirmed	SDG Ref	26952939	26952887	26953013			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES6	ES36	ES28			
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	70.2	47.6	62.7			
Acenaphthene-d10 % recovery**	%	TM218	76.7	50	64.4			
Phenanthrene-d10 % recovery**	%	TM218	41.4	13.4	27.9			
Chrysene-d12 % recovery**	%	TM218	5.93	0.56	4			
Perylene-d12 % recovery**	%	TM218	1.89	0.26	1.44			
Naphthalene	<9 µg/kg	TM218	46.3	<9	<9			
			M	M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12			
			M	M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8			
			M	M	M			
Fluorene	<10 µg/kg	TM218	<10	<10	<10			
			M	M	M			
Phenanthrene	<15 µg/kg	TM218	21.1	<15	<15			
			M	M	M			
Anthracene	<16 µg/kg	TM218	<16	<16	<16			
			M	M	M			
Fluoranthene	<17 µg/kg	TM218	<17	<17	<17			
			M	M	M			
Pyrene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14			
			M	M	M			
Chrysene	<10 µg/kg	TM218	<10	<10	<10			
			M	M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14			
			M	M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18			
			M	M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23			
			M	M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24			
			M	M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118	<118			



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SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

VOC MS (S)

Table with columns: Component, LOD/Units, Method, and three BH102 sample columns (F-3HJ8VB-9YU0, F-LMOAVB-1LL7, F-2GOAVB-SGGC). Rows include Dibromofluoromethane, Toluene-d8, 4-Bromofluorobenzene, Methyl Tertiary Butyl Ether, Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, and Sum of BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH102ES6 1.00 - 1.00 SOLID 27/09/2022 00:00:00 30/09/2022 05:00:00 220930-153 26952939 TM048	11/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH102ES36 14.80 - 14.80 SOLID 28/09/2022 00:00:00 30/09/2022 05:00:00 220930-153 26952887 TM048	11/10/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH102ES28 9.80 - 9.80 SOLID 28/09/2022 00:00:00 30/09/2022 05:00:00 220930-153 26953013 TM048	11/10/2020	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.211	Natural Moisture Content (%)	19.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	83.4
Particle Size <4mm	>95%		

Case	
SDG	220930-153
Lab Sample Number(s)	26952939
Sampled Date	27-Sep-2022
Customer Sample Ref.	BH102 ES6
Depth (m)	1.00 - 1.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.013	<0.003	0.026	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8	<0.001	-	-
Sulphate (soluble)	17.8	<2	35.6	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	3.35	<3	6.7	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0144	<0.01	0.0288	<0.02
Arsenic	0.235	<0.00209	0.47	<0.00418
Nitrate as NO3	2.61	<0.3	5.22	<0.6
Total Ammonium Low as NH4	0.186	<0.01	0.372	<0.02
Boron	0.0927	<0.01	0.185	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0108	<0.001	0.0216	<0.002
Copper	0.000869	<0.0003	0.00174	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.000411	<0.0004	0.000822	<0.0008
Selenium	0.0248	<0.001	0.0496	<0.002
Zinc	0.00195	<0.001	0.0039	<0.002
Calcium (Dis.Filt) mg/l	31.7	<0.2	63.4	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	89.5	<0.65	179	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	07-Oct-2022
pH (pH Units)	7.83
Conductivity (µS/cm)	979.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.314
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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16:36:19 13/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.211	Natural Moisture Content (%)	19.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	83.4
Particle Size <4mm	>95%		

Case	
SDG	220930-153
Lab Sample Number(s)	26952939
Sampled Date	27-Sep-2022
Customer Sample Ref.	BH102 ES6
Depth (m)	1.00 - 1.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	07-Oct-2022
pH (pH Units)	7.83
Conductivity (µS/cm)	979.00
Temperature (°C)	20.60
Volume Leachant (Litres)	0.314
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

 SDG: 220930-153
 Client Ref.: F212561

 Report Number: 664653
 Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	17.4
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	85.2
Particle Size <4mm	>95%		

Case	
SDG	220930-153
Lab Sample Number(s)	26953013
Sampled Date	28-Sep-2022
Customer Sample Ref.	BH102 ES28
Depth (m)	9.80 - 9.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.016	<0.003	0.032	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8.3	<0.001	-	-
Sulphate (soluble)	45.9	<2	91.8	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0159	<0.01	0.0318	<0.02
Arsenic	0.233	<0.00198	0.466	<0.00396
Nitrate as NO3	2.38	<0.3	4.76	<0.6
Total Ammonium Low as NH4	0.205	<0.01	0.41	<0.02
Boron	1.06	<0.01	2.12	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0134	<0.001	0.0268	<0.002
Copper	0.000787	<0.0003	0.00157	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.000795	<0.0004	0.00159	<0.0008
Selenium	0.0313	<0.001	0.0626	<0.002
Zinc	0.00283	<0.001	0.00566	<0.002
Calcium (Dis.Filt) mg/l	23.6	<0.2	47.2	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	125	<0.65	250	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	0.00000995	<0.000005	0.0000199	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	04-Oct-2022
pH (pH Units)	8.43
Conductivity (µS/cm)	250.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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CERTIFICATE OF ANALYSIS

Validated

SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.206	Natural Moisture Content (%)	17.4
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	85.2
Particle Size <4mm	>95%		

Case	
SDG	220930-153
Lab Sample Number(s)	26953013
Sampled Date	28-Sep-2022
Customer Sample Ref.	BH102 ES28
Depth (m)	9.80 - 9.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	04-Oct-2022
pH (pH Units)	8.43
Conductivity (µS/cm)	250.00
Temperature (°C)	18.60
Volume Leachant (Litres)	0.319
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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SDG: 220930-153
Client Ref.: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26952887	26952939	26953013
Customer Sample Ref.	BH102	BH102	BH102
AGS Ref.	ES36	ES6	ES28
Depth	14.80 - 14.80	1.00 - 1.00	9.80 - 9.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low		10-Oct-2022	10-Oct-2022
Ammonium Soil by Titration	06-Oct-2022	06-Oct-2022	06-Oct-2022
Anions by Kone (soil)	10-Oct-2022	13-Oct-2022	10-Oct-2022
Anions by Kone (w)		10-Oct-2022	08-Oct-2022
Asbestos ID in Solid Samples	11-Oct-2022	11-Oct-2022	11-Oct-2022
CEN 2:1 Leachate (1 Stage)		07-Oct-2022	06-Oct-2022
CEN Readings		10-Oct-2022	07-Oct-2022
Chromium III	07-Oct-2022	11-Oct-2022	11-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	07-Oct-2022	07-Oct-2022	07-Oct-2022
Dissolved Metals by ICP-MS		11-Oct-2022	11-Oct-2022
Dissolved Organic/Inorganic Carbon		11-Oct-2022	08-Oct-2022
Easily Liberated Sulphide	11-Oct-2022	11-Oct-2022	11-Oct-2022
Elemental Sulphur	11-Oct-2022	11-Oct-2022	11-Oct-2022
EPH	11-Oct-2022	11-Oct-2022	11-Oct-2022
EPH by GCxGC-FID	06-Oct-2022	06-Oct-2022	06-Oct-2022
GRO by GC-FID (S)	11-Oct-2022	11-Oct-2022	11-Oct-2022
Hexavalent Chromium (s)	05-Oct-2022	05-Oct-2022	05-Oct-2022
Low Level Cyanide (W)		11-Oct-2022	10-Oct-2022
Low Level Hexavalent Chromium (w)		11-Oct-2022	11-Oct-2022
Mercury Dissolved		11-Oct-2022	11-Oct-2022
Metals in solid samples by OES	07-Oct-2022	07-Oct-2022	07-Oct-2022
Moisture at 105C		07-Oct-2022	04-Oct-2022
Nitrite by Kone (w)		08-Oct-2022	07-Oct-2022
NO3, NO2 and TON by KONE (s)	10-Oct-2022	13-Oct-2022	13-Oct-2022
PAH by GCMS	11-Oct-2022	11-Oct-2022	11-Oct-2022
PAH Spec MS - Aqueous (W)		11-Oct-2022	10-Oct-2022
pH	07-Oct-2022	07-Oct-2022	07-Oct-2022
pH Value of Filtered Water		10-Oct-2022	08-Oct-2022
Phenols by HPLC (S)	06-Oct-2022	06-Oct-2022	06-Oct-2022
Sample description	04-Oct-2022	04-Oct-2022	04-Oct-2022
Total Organic Carbon	10-Oct-2022	10-Oct-2022	10-Oct-2022
Total Sulphate	06-Oct-2022	06-Oct-2022	06-Oct-2022
VOC MS (S)	10-Oct-2022	10-Oct-2022	10-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 220930-153
Client Ref: F212561

Report Number: 664653
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	13 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221003-12
Your Reference:	F212561
Location:	Keadby 3
Report No:	664656
Order Number:	386/121917/CP

We received 4 samples on Saturday October 01, 2022 and 1 of these samples were scheduled for analysis which was completed on Thursday October 13, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

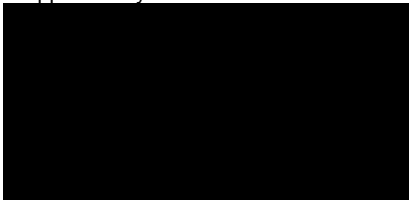
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221003-12
Client Ref.: F212561

Report Number: 664656
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26958985	MS-BH22	ES2	0.10 - 0.10	28/09/2022
26958992	MS-BH22	ES4	0.40 - 0.40	28/09/2022
26958999	MS-BH22	ES7	0.75 - 0.75	28/09/2022
26959006	MS-BH22	ES8	1.20 - 1.20	28/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



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SDG: 221003-12
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Superseded Report:

Results Legend					
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		26968999		
	Customer Sample Reference		MS-BH22		
	AGS Reference		ES7		
	Depth (m)		0.75 - 0.75		
	Container	1kg TUB with Handle (ALE260)		60g VOC (ALE215)	
	Sample Type		S	S	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		



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Superseded Report:

Results Legend <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 20px; height: 20px; background-color: yellow; border: 1px solid black; display: flex; align-items: center; justify-content: center; margin-right: 5px;">X</div> Test </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 20px; height: 20px; background-color: red; color: white; border: 1px solid black; display: flex; align-items: center; justify-content: center; margin-right: 5px;">N</div> No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		26956999			
	Customer Sample Reference		MS-BH22			
	AGS Reference		ES7			
	Depth (m)		0.75 - 0.75			
	Container		1kg TUB with Handle (ALE260)	60g VOC (ALE215)		
	Sample Type		S	S		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
TPH CWG GC (S)	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1		X		



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Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26958999	MS-BH22	0.75 - 0.75	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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SDG: 221003-12
Client Ref.: F212561

Report Number: 664656
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH22			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS4220928007 0.75 - 0.75 Soil/Solid (S) 28/09/2022 13:15 01/10/2022 221003-12 26958999 ES7			
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	7.1			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M		
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35	#		
pH	1 pH Units	TM133	8.48	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	M		
Cyanide, Free	<1 mg/kg	TM153	<1	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	7.42			
Arsenic	<0.6 mg/kg	TM181	1.84	M		
Boron	<0.7 mg/kg	TM181	1.45	#		
Cadmium	<0.02 mg/kg	TM181	0.0672	M		
Chromium	<0.9 mg/kg	TM181	7.42	M		
Copper	<1.4 mg/kg	TM181	3.23	M		
Iron	<1000 mg/kg	TM181	4800	#		
Lead	<0.7 mg/kg	TM181	5.83	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	5.45	M		
Selenium	<1 mg/kg	TM181	<1	#		
Zinc	<1.9 mg/kg	TM181	18.6	M		
Sulphate, Total	<48 mg/kg	TM221	177	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0059			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.13			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0618	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1			
EPH (C5-C40)	<35 mg/kg	TM415	<35			
EPH Surrogate % recovery**	%	TM415	107			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221003-12
Client Ref.: F212561

Report Number: 664656
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH22				
#	ISO17025 accredited.		ADS4220928007				
M	mCERTS accredited.		0.75 - 0.75				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	28/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:15				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221003-12				
	(F) Trigger breach confirmed	SDG Ref	26958999				
	1-4*\$@ Sample deviation (see appendix)	Lab Sample No.(s)	ES7				
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	83.2				
Acenaphthene-d10 % recovery**	%	TM218	92				
Phenanthrene-d10 % recovery**	%	TM218	97.4				
Chrysene-d12 % recovery**	%	TM218	92.4				
Perylene-d12 % recovery**	%	TM218	87.4				
Naphthalene	<9 µg/kg	TM218	<9				
				M			
Acenaphthylene	<12 µg/kg	TM218	<12				
				M			
Acenaphthene	<8 µg/kg	TM218	<8				
				M			
Fluorene	<10 µg/kg	TM218	<10				
				M			
Phenanthrene	<15 µg/kg	TM218	<15				
				M			
Anthracene	<16 µg/kg	TM218	<16				
				M			
Fluoranthene	<17 µg/kg	TM218	<17				
				M			
Pyrene	<15 µg/kg	TM218	<15				
				M			
Benz(a)anthracene	<14 µg/kg	TM218	<14				
				M			
Chrysene	<10 µg/kg	TM218	<10				
				M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15				
				M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14				
				M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15				
				M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18				
				M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23				
				M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24				
				M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

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SDG: 221003-12
Client Ref.: F212561

Report Number: 664656
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.								
#	ISO17025 accredited.	MS-BH22 ADS4220928007 0.75 - 0.75 Soil/Solid (S) 28/09/2022 13:15 01/10/2022 221003-12 26958999 ES7	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-4*§	Sample deviation (see appendix)									
Component	LOD/Units									
GRO Surrogate % recovery**	%	TM089	113							
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10							
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#						
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000							
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000							
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000							
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10							
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#						
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000							
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000							
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000							
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000							
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50							
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20							



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SDG: 221003-12
Client Ref.: F212561

Report Number: 664656
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.		MS-BH22				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		ADS4220928007 0.75 - 0.75 Soil/Solid (S) 28/09/2022 13:15 01/10/2022 221003-12 26958999 ES7				
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	106					
Toluene-d8**	%	TM116	97.8					
4-Bromofluorobenzene**	%	TM116	98.2					
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	M				
Benzene	<9 µg/kg	TM116	<9	M				
Toluene	<7 µg/kg	TM116	<7	M				
Ethylbenzene	<4 µg/kg	TM116	<4	M				
p/m-Xylene	<10 µg/kg	TM116	<10	#				
o-Xylene	<10 µg/kg	TM116	<10	M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.02					
Sum of BTEX	<40 µg/kg	TM116	<40					



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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Superseded Report:

Test Completion Dates

Lab Sample No(s)	26958999
Customer Sample Ref.	MS-BH22
AGS Ref.	ES7
Depth	0.75 - 0.75
Type	Soil/Solid (S)

Ammonium Soil by Titration	10-Oct-2022
Anions by Kone (soil)	13-Oct-2022
Chromium III	13-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	11-Oct-2022
Easily Liberated Sulphide	11-Oct-2022
Elemental Sulphur	12-Oct-2022
EPH	11-Oct-2022
EPH by GCxGC-FID	11-Oct-2022
EPH CWG GC (S)	10-Oct-2022
GRO by GC-FID (S)	11-Oct-2022
Hexavalent Chromium (s)	13-Oct-2022
Metals in solid samples by OES	12-Oct-2022
NO3, NO2 and TON by KONE (s)	13-Oct-2022
PAH by GCMS	12-Oct-2022
pH	07-Oct-2022
Phenols by HPLC (S)	11-Oct-2022
Sample description	07-Oct-2022
Total Organic Carbon	12-Oct-2022
Total Sulphate	12-Oct-2022
TPH CWG GC (S)	11-Oct-2022
VOC MS (S)	10-Oct-2022



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Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 25 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221005-84
Your Reference: F212561
Location: Keadby 3
Report No: 665819
Order Number: 386/121917/CP

This report has been revised and directly supersedes 664987 in its entirety.

We received 9 samples on Saturday October 01, 2022 and 2 of these samples were scheduled for analysis which was completed on Tuesday October 25, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

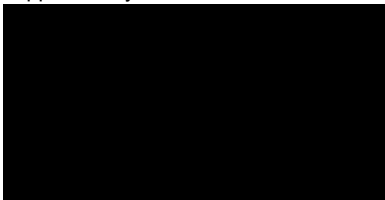
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-84
Client Ref.: F212561

Report Number: 665819
Location: Keadby 3

Superseded Report: 664987

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26971229	BH103	ES1	0.20 - 0.20	29/09/2022
26971273	BH103	ES4	0.50 - 0.50	29/09/2022
26971283	BH103	ES7	1.00 - 1.00	29/09/2022
26971291	BH103	ES8	1.20 - 1.20	29/09/2022
26971237	BH103	ES10	1.80 - 1.80	29/09/2022
26971244	BH103	ES13	2.80 - 2.80	29/09/2022
26971251	BH103	ES16	3.80 - 3.80	29/09/2022
26971258	BH103	ES18	4.80 - 4.80	29/09/2022
26971265	BH103	ES21	5.80 - 5.80	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-84
Client Ref.: F212561

Report Number: 665819
Location: Keadby 3

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Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; display: flex; align-items: center; justify-content: center; font-size: 8px;">X</div> Test </div> <div style="display: flex; align-items: center; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: red; border: 1px solid black; display: flex; align-items: center; justify-content: center; font-size: 8px;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26971291	BH103	ES8	1.20 - 1.20	60g VOC (ALE215)	S
			BH103			250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2			X	X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 2			X	X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2			X	X	
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1				X	
Chromium III	All	NDPs: 0 Tests: 2			X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2			X	X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2			X	X	
Elemental Sulphur	All	NDPs: 0 Tests: 2			X	X	
EPH	All	NDPs: 0 Tests: 2			X	X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2			X	X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2				X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2			X	X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 2			X	X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2			X	X	
PAH by GCMS	All	NDPs: 0 Tests: 2			X	X	



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SDG: 221005-84
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Report Number: 665819
Location: Keadby 3

Superseded Report: 664987

Results Legend	Lab Sample No(s)		26971291	26971265		
	X Test	N No Determination Possible				
Customer Sample Reference		BH103		BH103		
AGS Reference		ES8		ES21		
Depth (m)		1.20 - 1.20		5.80 - 5.80		
Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type		S	S	S	S	S
pH	All	NDPs: 0 Tests: 2	X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X	
Sample description	All	NDPs: 0 Tests: 2	X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X	
Total Sulphate	All	NDPs: 0 Tests: 2	X		X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X

Sample Types -
 S - Soil/Solid
 UNS - Unspecified Solid
 GW - Ground Water
 SW - Surface Water
 LE - Land Leachate
 PL - Prepared Leachate
 PR - Process Water
 SA - Saline Water
 TE - Trade Effluent
 TS - Treated Sewage
 US - Untreated Sewage
 RE - Recreational Water
 DW - Drinking Water Non-regulatory
 UNL - Unspecified Liquid
 SL - Sludge
 G - Gas
 OTH - Other



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26971265	BH103	5.80 - 5.80	Dark Brown	Silt Loam	None	None
26971291	BH103	1.20 - 1.20	Light Brown	Silty Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Results Legend		Customer Sample Ref.	BH103	BH103			
#	ISO17025 accredited.		F-RXYCVB-JC90	F-D4ZCVB-WZ87			
M	mCERTS accredited.		1.20 - 1.20	5.80 - 5.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:10	14:50			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/10/2022	01/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221005-84	221005-84			
(F)	Trigger breach confirmed	SDG Ref	26971291	26971265			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES8	ES21			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	18			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	19.3	21.2	#	#	
pH	1 pH Units	TM133	8.23	8.37	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	92.2	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	22	26.2			
Arsenic	<0.6 mg/kg	TM181	85	103	M	M	
Boron	<0.7 mg/kg	TM181	16.8	21.4	#	#	
Cadmium	<0.02 mg/kg	TM181	0.278	0.214	M	M	
Chromium	<0.9 mg/kg	TM181	22	26.2	M	M	
Copper	<1.4 mg/kg	TM181	63.5	73.2	M	M	
Iron	<1000 mg/kg	TM181	29300	30700	#	#	
Lead	<0.7 mg/kg	TM181	49	44	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	45.3	48	M	M	
Selenium	<1 mg/kg	TM181	1.25	2.41	#	#	
Zinc	<1.9 mg/kg	TM181	60.5	56.3	M	M	
Sulphate, Total	<48 mg/kg	TM221	245	271	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.00816	0.00905			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.16	<0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0354	0.0543	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	1.79	3.52			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001		#	
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001		#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-84
Client Ref.: F212561

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Location: Keadby 3

Superseded Report: 664987

PAH by GCMS

Results Legend		Customer Sample Ref.	BH103	BH103			
#	ISO17025 accredited.		F-RXYCVB-JC90	F-D4ZCVB-WZ87			
M	mCERTS accredited.		1.20 - 1.20	5.80 - 5.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.filt	Dissolved / filtered sample.	Sample Type	29/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:10	14:50			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/10/2022	01/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221005-84	221005-84			
(F)	Trigger breach confirmed	SDG Ref	26971291	26971265			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES8	ES21			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	75	62.1			
Acenaphthene-d10 % recovery**	%	TM218	86.3	63.1			
Phenanthrene-d10 % recovery**	%	TM218	60.3	26.8			
Chrysene-d12 % recovery**	%	TM218	30.7	3.81			
Perylene-d12 % recovery**	%	TM218	15	0.94			
Naphthalene	<9 µg/kg	TM218	<45	15.2			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<60	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<40	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<50	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	<75	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	<80	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	<85	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	<75	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	<70	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	<50	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<75	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<70	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<75	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<90	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<115	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<120	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<590	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-84

Report Number: 665819

Superseded Report: 664987

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend			Customer Sample Ref.	
# ISO17025 accredited.			BH103	BH103
M mCERTS accredited.			F-RXYCVB-JC90	F-D4ZCVB-WZ87
aq Aqueous / settled sample.		Depth (m)	1.20 - 1.20	5.80 - 5.80
diss.filt Dissolved / filtered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt Total / unfiltered sample.		Date Sampled	29/09/2022	29/09/2022
*		Date Sampled	14:10	14:50
**		Sample Time	01/10/2022	01/10/2022
		Date Received	221005-84	221005-84
		SDG Ref	26971291	26971265
		Lab Sample No.(s)	ES8	ES21
(F)		AGS Reference		
1-4*\$@				
Trigger breach confirmed				
Sample deviation (see appendix)				
Component	LOD/Units	Method		
Dibromofluoromethane**	%	TM116	112	129
Toluene-d8**	%	TM116	98.9	95.8
4-Bromofluorobenzene**	%	TM116	87.6	73.8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M	<200 M
Benzene	<9 µg/kg	TM116	<180 M	<180 M
Toluene	<7 µg/kg	TM116	<140 M	<140 M
Ethylbenzene	<4 µg/kg	TM116	<80 M	<80 M
p/m-Xylene	<10 µg/kg	TM116	<200 #	<200 #
o-Xylene	<10 µg/kg	TM116	<200 M	<200 M
Sum of BTEX	<40 µg/kg	TM116	<800	<800



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Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH103ES8 1.20 - 1.20 SOLID 29/09/2022 00:00:00 01/10/2022 10:00:00 221005-84 26971291 TM048	14/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH103ES21 5.80 - 5.80 SOLID 29/09/2022 00:00:00 01/10/2022 10:00:00 221005-84 26971265 TM048	14/10/2022	James Richards	Fibre bundle in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected



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SDG: 221005-84
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Asbestos Quantification - Full

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	BH103ES21	None (#)	N/A	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	5.80 - 5.80					
Sample Type	SOLID					
Date Sampled	29/09/2022 00:00:00					
Date Received	01/10/2022 10:00:00					
SDG	221005-84					
Original Sample	26971265					
Method Number	TM304					



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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Client Ref.: F212561

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Location: Keadby 3

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Test Completion Dates

Lab Sample No(s)	26971265	26971291
Customer Sample Ref.	BH103	BH103
AGS Ref.	ES21	ES8
Depth	5.80 - 5.80	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	10-Oct-2022	10-Oct-2022
Anions by Kone (soil)	14-Oct-2022	14-Oct-2022
Asbestos ID in Solid Samples	14-Oct-2022	14-Oct-2022
Asbestos Quantification - Full	25-Oct-2022	
Chromium III	13-Oct-2022	13-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2022	10-Oct-2022
Easily Liberated Sulphide	11-Oct-2022	11-Oct-2022
Elemental Sulphur	13-Oct-2022	13-Oct-2022
EPH	12-Oct-2022	12-Oct-2022
EPH by GCxGC-FID	07-Oct-2022	07-Oct-2022
GRO by GC-FID (S)	12-Oct-2022	12-Oct-2022
Hexavalent Chromium (s)	13-Oct-2022	13-Oct-2022
Metals in solid samples by OES	12-Oct-2022	12-Oct-2022
NO3, NO2 and TON by KONE (s)	14-Oct-2022	14-Oct-2022
PAH by GCMS	14-Oct-2022	13-Oct-2022
pH	10-Oct-2022	10-Oct-2022
Phenols by HPLC (S)	10-Oct-2022	10-Oct-2022
Sample description	06-Oct-2022	06-Oct-2022
Total Organic Carbon	11-Oct-2022	11-Oct-2022
Total Sulphate	10-Oct-2022	10-Oct-2022
VOC MS (S)	12-Oct-2022	12-Oct-2022



CERTIFICATE OF ANALYSIS

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Report Number: 665819
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Superseded Report: 664987

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221005-85
Your Reference:	F212561
Location:	Keadby 3
Report No:	664873
Order Number:	386/121917/CP

We received 4 samples on Saturday October 01, 2022 and 1 of these samples were scheduled for analysis which was completed on Friday October 14, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

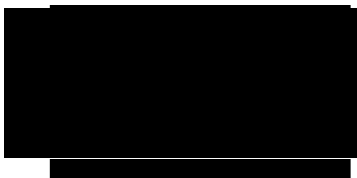
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26971303	DS105	ES1	0.10 - 0.10	30/09/2022
26971311	DS105	ES5	0.40 - 0.40	30/09/2022
26971318	DS105	ES7	0.80 - 0.80	30/09/2022
26971325	DS105	ES8	1.20 - 1.20	30/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	2697/318	DS105	ES7	0.80 - 0.80	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
	Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
	Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
	Chromium III	All	NDPs: 0 Tests: 1	X		
	Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	2697/318	DS105	EST	0.80 - 0.80	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
	Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X		
	Sample description	All	NDPs: 0 Tests: 1	X		
	Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
	Total Sulphate	All	NDPs: 0 Tests: 1	X		
	VOC MS (S)	All	NDPs: 0 Tests: 1			X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26971318	DS105	0.80 - 0.80	Light Brown	Loamy Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS105 ADS1220927015 0.80 - 0.80 Soil/Solid (S) 30/09/2022 17:10 01/10/2022 221005-85 26971318 ES7					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	14				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M			
Soil Organic Matter (SOM)	<0.35 %	TM132	15.1	#			
pH	1 pH Units	TM133	8.53	M			
Sulphur, Elemental	<10 mg/kg	TM136	<100	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	M			
Cyanide, Free	<1 mg/kg	TM153	<1	M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	26.7				
Arsenic	<0.6 mg/kg	TM181	91	M			
Boron	<0.7 mg/kg	TM181	22.3	#			
Cadmium	<0.02 mg/kg	TM181	0.313	M			
Chromium	<0.9 mg/kg	TM181	26.7	M			
Copper	<1.4 mg/kg	TM181	72.8	M			
Iron	<1000 mg/kg	TM181	22100	#			
Lead	<0.7 mg/kg	TM181	42.4	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	46.4	M			
Selenium	<1 mg/kg	TM181	1.83	#			
Zinc	<1.9 mg/kg	TM181	52.3	M			
Sulphate, Total	<48 mg/kg	TM221	1080	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0359				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0156	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	4.57				
EPH (C5-C40)	<35 mg/kg	TM415	<35				
EPH Surrogate % recovery**	%	TM415	99.3				



CERTIFICATE OF ANALYSIS

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DS105					
#	ISO17025 accredited.		ADS1220927015					
M	mCERTS accredited.		0.80 - 0.80					
sq	Aqueous / settled sample.		Soil/Solid (S)					
dis.filter	Dissolved / filtered sample.	Depth (m)	30/09/2022					
tot.unfilt	Total / unfiltered sample.	Sample Type	17:10					
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	01/10/2022					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	221005-85					
(F)	Trigger breach confirmed	Date Received	26971318					
1-4*§@	Sample deviation (see appendix)	SDG Ref	ES7					
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85

Report Number: 664873

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS105				
#	ISO17025 accredited.		ADS1220927015				
M	mCERTS accredited.		0.80 - 0.80				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Depth (m)	30/09/2022				
tot.unfilt	Total / unfiltered sample.	Sample Type	17:10				
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	01/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221005-85				
(F)	Trigger breach confirmed	SDG Ref	26971318				
1-4*@\$	Sample deviation (see appendix)	Lab Sample No.(s)	ES7				
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	4			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS105				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220927015				
M	mCERTS accredited.		0.80 - 0.80				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		30/09/2022				
tot.unfilt	Total / unfiltered sample.		17:10				
*	Subcontracted - refer to subcontractor report for accreditation status.		01/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221005-85				
(F)	Trigger breach confirmed		26971318				
1-4*\$@	Sample deviation (see appendix)		ES7				
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	73.2				
Acenaphthene-d10 % recovery**	%	TM218	77.7				
Phenanthrene-d10 % recovery**	%	TM218	61				
Chrysene-d12 % recovery**	%	TM218	31.5				
Perylene-d12 % recovery**	%	TM218	13.5				
Naphthalene	<9 µg/kg	TM218	<9	M			
Acenaphthylene	<12 µg/kg	TM218	<12	M			
Acenaphthene	<8 µg/kg	TM218	<8	M			
Fluorene	<10 µg/kg	TM218	<10	M			
Phenanthrene	<15 µg/kg	TM218	<15	M			
Anthracene	<16 µg/kg	TM218	<16	M			
Fluoranthene	<17 µg/kg	TM218	<17	M			
Pyrene	<15 µg/kg	TM218	<15	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	M			
Chrysene	<10 µg/kg	TM218	<10	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.					
# ISO17025 accredited.		DS105					
M mCERES accredited.		ADS1220927015					
aq Aqueous / settled sample.		0.80 - 0.80					
diss.filter Dissolved / filtered sample.		Soil/Solid (S)					
tot.unfilt Total / unfiltered sample.		30/09/2022					
* Subcontracted - refer to subcontractor report for accreditation status.		Depth (m)	17.10				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Sample Type	01/10/2022				
(F) Trigger breach confirmed		Date Sampled	221005-85				
1-4*#@ Sample deviation (see appendix)		Sample Time	26971318				
		Date Received	ES7				
		SDG Ref					
		Lab Sample No.(s)					
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	120				
Toluene-d8**	%	TM116	98.2				
4-Bromofluorobenzene**	%	TM116	87.8				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200				
				M			
Benzene	<9 µg/kg	TM116	<180				
				M			
Toluene	<7 µg/kg	TM116	<140				
				M			
Ethylbenzene	<4 µg/kg	TM116	<80				
				M			
p/m-Xylene	<10 µg/kg	TM116	<200				
				#			
o-Xylene	<10 µg/kg	TM116	<200				
				M			
Sum of BTEX	<40 µg/kg	TM116	<800				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
14/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	DS105E7
Depth (m)	0.80 - 0.80
Sample Type	SOLID
Date Sampled	30/09/2022 00:00:00
Date Received	01/10/2022 10:00:00
SDG	221005-85
Original Sample	26971318
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-85
Client Ref.: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26971318
Customer Sample Ref.	DS105
AGS Ref.	ES7
Depth	0.80 - 0.80
Type	Soil/Solid (S)

Ammonium Soil by Titration	10-Oct-2022
Anions by Kone (soil)	14-Oct-2022
Asbestos ID in Solid Samples	14-Oct-2022
Chromium III	13-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2022
Easily Liberated Sulphide	11-Oct-2022
Elemental Sulphur	11-Oct-2022
EPH	12-Oct-2022
EPH by GCxGC-FID	07-Oct-2022
GRO by GC-FID (S)	12-Oct-2022
Hexavalent Chromium (s)	13-Oct-2022
Metals in solid samples by OES	12-Oct-2022
NO3, NO2 and TON by KONE (s)	14-Oct-2022
PAH by GCMS	14-Oct-2022
pH	10-Oct-2022
Phenols by HPLC (S)	10-Oct-2022
Sample description	06-Oct-2022
Total Organic Carbon	11-Oct-2022
Total Sulphate	10-Oct-2022
VOC MS (S)	12-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221005-85
Client Ref: F212561

Report Number: 664873
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221005-86
Your Reference: F212561
Location: Keadby 3
Report No: 665670
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665242 in its entirety.

We received 6 samples on Saturday October 01, 2022 and 4 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26971362	MS-BH25	ES2	0.10 - 0.10	26/09/2022
26971370	MS-BH25	ES5	0.40 - 0.40	26/09/2022
26971377	MS-BH25	ES9	0.75 - 0.75	26/09/2022
26971337	MS-BH25	ES10	1.20 - 1.20	26/09/2022
26971344	MS-BH25	ES13	1.50 - 1.50	26/09/2022
26971354	MS-BH25	ES17	2.50 - 2.50	26/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> Test</div> <div style="display: flex; align-items: center;"> No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		26971370	MS-BH25	ESS	0.40 - 0.40	1kg TUB with Handle (ALE260)	S
		26971377	MS-BH25	ES9	0.75 - 0.75	250g Amber Jar (ALE210)	S
		26971337	MS-BH25	ES10	1.20 - 1.20	1kg TUB with Handle (ALE260)	S
		26971344	MS-BH25	ES13	1.50 - 1.50	250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3					
Asbestos Quantification - Full	All	NDPs: 0 Tests: 1					
Chromium III	All	NDPs: 0 Tests: 3					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3					
Metals in solid samples by OES	All	NDPs: 0 Tests: 3					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container						Sample Type	
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)		
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1						X				
PAH by GCMS	All	NDPs: 0 Tests: 3			X		X			X		
PCBs by GCMS	All	NDPs: 0 Tests: 1								X		
pH	All	NDPs: 0 Tests: 3			X		X			X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3			X		X			X		
Sample description	All	NDPs: 0 Tests: 4			X		X	X		X		
Total Organic Carbon	All	NDPs: 0 Tests: 3			X		X			X		
Total Sulphate	All	NDPs: 0 Tests: 3			X		X			X		
VOC MS (S)	All	NDPs: 0 Tests: 3				X		X				X



CERTIFICATE OF ANALYSIS

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SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26971337	MS-BH25	1.20 - 1.20	Light Brown	Loamy Sand	Stones	None
26971344	MS-BH25	1.50 - 1.50	Grey	Loamy Sand	Stones	None
26971370	MS-BH25	0.40 - 0.40	Light Brown	Silty Sand	Stones	None
26971377	MS-BH25	0.75 - 0.75	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Results Legend		Customer Sample Ref.	MS-BH25	MS-BH25	MS-BH25	MS-BH25	
#	ISO17025 accredited.		MS-BH25	MS-BH25	MS-BH25	MS-BH25	
M	mCERTS accredited.		ADS4220926005	ADS4220926009	ADS4220926010	ADS4220927002	
aq	Aqueous / settled sample.	Depth (m)	0.40 - 0.40	0.75 - 0.75	1.20 - 1.20	1.50 - 1.50	
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
tot.unfilt	Total / unfiltered sample.	Date Sampled	26/09/2022	26/09/2022	26/09/2022	26/09/2022	
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07:49	07:49	07:50	07:48	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	01/10/2022	01/10/2022	01/10/2022	01/10/2022	
(F)	Trigger breach confirmed	SDG Ref	221005-86	221005-86	221005-86	221005-86	
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	26971370	26971377	26971337	26971344	
		AGS Reference	ES5	ES9	ES10	ES13	
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	12	7.6	11	12	
2,4,5-T*	<0.01 mg/kg	SUB			<0.01		
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB			<0.01		
2,4-D*	<0.01 mg/kg	SUB			<0.01		
2,4-DB*	<0.01 mg/kg	SUB			<0.01		
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB			<0.01		
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB			<0.01		
Acifluorfen*	<0.01 mg/kg	SUB			<0.01		
Bentazone*	<0.01 mg/kg	SUB			<0.01		
Bromoxynil*	<0.01 mg/kg	SUB			<0.01		
Dicamba*	<0.01 mg/kg	SUB			<0.01		
Diclofop*	<0.01 mg/kg	SUB			<0.01		
Dinoseb*	<0.01 mg/kg	SUB			<0.01		
DNOC*	<0.01 mg/kg	SUB			<0.01		
Fluroxypyr*	<0.01 mg/kg	SUB			<0.01		
loxynil*	<0.01 mg/kg	SUB			<0.01		
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB			<0.01		
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB			<0.01		
Mecoprop (MCP)*	<0.01 mg/kg	SUB			<0.01		
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB			<0.01		
Triclopyr*	<0.01 mg/kg	SUB			<0.01		
Triclosan*	<0.01 mg/kg	SUB			<0.01		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15		<15	
			M	M		M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12		<12	
			M	M		M	
Phenol	<0.01 mg/kg	TM062 (S)	0.0342	0.0325		<0.01	
			M	M		M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	0.0217		<0.01	
			M	M		M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015		<0.015	
			M	M		M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	0.0542		<0.035	
			M	M		M	
Soil Organic Matter (SOM)	<0.35 %	TM132	0.736	1.14		0.534	
			#	#		#	
pH	1 pH Units	TM133	12.4	10.9		11.4	
			M	M		M	
Sulphur, Elemental	<10 mg/kg	TM136	26.6	51.7		169	
			M	M		M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6		<0.6	
			M	M		M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1		<1	
			M	M		M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Results Legend		Customer Sample Ref.	MS-BH25 ADS4220926005 0.40 - 0.40 Soil/Solid (S) 26/09/2022 07:49 01/10/2022 221005-86 26971370 ES5	MS-BH25 ADS4220926009 0.75 - 0.75 Soil/Solid (S) 26/09/2022 07:49 01/10/2022 221005-86 26971377 ES9	MS-BH25 ADS4220926010 1.20 - 1.20 Soil/Solid (S) 26/09/2022 07:50 01/10/2022 221005-86 26971337 ES10	MS-BH25 ADS4220927002 1.50 - 1.50 Soil/Solid (S) 26/09/2022 07:48 01/10/2022 221005-86 26971344 ES13
Component	LOD/Units	Method				
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M		<1 M
PCB congener 28	<3 µg/kg	TM168				<3 M
PCB congener 52	<3 µg/kg	TM168				<3 M
PCB congener 101	<3 µg/kg	TM168				<3 M
PCB congener 118	<3 µg/kg	TM168				<3 M
PCB congener 138	<3 µg/kg	TM168				<3 M
PCB congener 153	<3 µg/kg	TM168				<3 M
PCB congener 180	<3 µg/kg	TM168				<3 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168				<21
PCB congener 81	<3 µg/kg	TM168				<3 M
PCB congener 77	<3 µg/kg	TM168				<3 M
PCB congener 123	<3 µg/kg	TM168				<3 M
PCB congener 114	<3 µg/kg	TM168				<3 M
PCB congener 105	<3 µg/kg	TM168				<3 M
PCB congener 126	<3 µg/kg	TM168				<3 M
PCB congener 167	<3 µg/kg	TM168				<3 M
PCB congener 156	<3 µg/kg	TM168				<3 M
PCB congener 157	<3 µg/kg	TM168				<3 M
PCB congener 169	<3 µg/kg	TM168				<3 M
PCB congener 189	<3 µg/kg	TM168				<3 M
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168				<36
Sulphide, Easily liberated	<15 mg/kg	TM180	308 @ M	106 @ M		787 @ M
Chromium, Trivalent	<0.9 mg/kg	TM181	18.5	391		9.23
Arsenic	<0.6 mg/kg	TM181	9.11 M	9.44 M		8.41 M
Boron	<0.7 mg/kg	TM181	26.4 #	28.8 #		98.6 #
Cadmium	<0.02 mg/kg	TM181	27.4 M	0.637 M		0.0409 M
Chromium	<0.9 mg/kg	TM181	18.5 M	391 M		9.23 M
Copper	<1.4 mg/kg	TM181	132 M	13.1 M		8.34 M
Iron	<1000 mg/kg	TM181	8600 #	97400 #		8420 #
Lead	<0.7 mg/kg	TM181	265 M	14.3 M		14.9 M
Mercury	<0.1 mg/kg	TM181	1.09 M	<0.1 M		<0.1 M
Nickel	<0.2 mg/kg	TM181	11.3 M	8.13 M		2.35 M
Selenium	<1 mg/kg	TM181	2.92 #	10.4 #		6.45 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Results Legend	Customer Sample Ref.		MS-BH25	MS-BH25	MS-BH25	MS-BH25			
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filter Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)	Depth (m)		0.40 - 0.40	0.75 - 0.75	1.20 - 1.20	1.50 - 1.50			
	Sample Type		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
	Date Sampled		26/09/2022	26/09/2022	26/09/2022	26/09/2022			
	Sample Time		07:49	07:49	07:50	07:48			
	Date Received		01/10/2022	01/10/2022	01/10/2022	01/10/2022			
	SDG Ref		221005-86	221005-86	221005-86	221005-86			
	Lab Sample No.(s)		26971370	26971377	26971337	26971344			
	AGS Reference		ES5	ES9	ES10	ES13			
	Component	LOD/Units	Method						
	Zinc	<1.9 mg/kg	TM181	1640	56.3		34.8	M	
Sulphate, Total	<48 mg/kg	TM221	17500	2120		73500	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.583	0.0706		2.45			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	1.01	0.34		0.16			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0159	0.0417		0.343	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	2.12	<1		<1			
Asbestos Quantification - Gravimetric - %	<0.001 %	TM304		<0.001	#				
Asbestos Quantification - PCOM Evaluation - %	<0.001 %	TM304		<0.001	#				
Additional Asbestos Components (Using TM048)		TM304		None	#				
Analysts Comments		TM304		0					
Asbestos Quantification - Total - %	<0.001 %	TM304		<0.001	#				
EPH (C5-C40)	<35 mg/kg	TM415	228	55.3		<35			
EPH Surrogate % recovery**	%	TM415	99.8	102		104			
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	228	55.3		<35	M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

GRO by GC-FID (S)

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.flit Dissolved / filtered sample. tot.unflit Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)		Customer Sample Ref.	MS-BH25 ADS4220926005 0.40 - 0.40 Soil/Solid (S) 26/09/2022 07:49 01/10/2022 221005-86 26971370 ES5	MS-BH25 ADS4220926009 0.75 - 0.75 Soil/Solid (S) 26/09/2022 07:49 01/10/2022 221005-86 26971377 ES9	MS-BH25 ADS4220927002 1.50 - 1.50 Soil/Solid (S) 26/09/2022 07:48 01/10/2022 221005-86 26971344 ES13
Component	LOD/Units	Method			
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20 @	<20 @	<20 @



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH25			
#	ISO17025 accredited.		ADS4220926010			
M	mCERTS accredited.		1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	26/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	07:50			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221005-86			
(F)	Trigger breach confirmed	SDG Ref	26971337			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES10			
		AGS Reference				
Component	LOD/Units	Method				
Dichlorvos	<50 µg/kg	TM073	<50			
Mevinphos	<50 µg/kg	TM073	<50			
Phorate	<50 µg/kg	TM073	<50			
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50			
Diazinon	<50 µg/kg	TM073	<50			
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50			
Disulfoton	<50 µg/kg	TM073	<50			
Heptachlor	<50 µg/kg	TM073	<50			
Aldrin	<50 µg/kg	TM073	<50			
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50			
Methyl parathion	<50 µg/kg	TM073	<50			
Malathion	<50 µg/kg	TM073	<50			
Fenitrothion	<50 µg/kg	TM073	<50			
Heptachlor epoxide	<50 µg/kg	TM073	<50			
Parathion	<50 µg/kg	TM073	<50			
Endosulphan I	<50 µg/kg	TM073	<50			
p,p-DDE	<50 µg/kg	TM073	<50			
Dieldrin	<50 µg/kg	TM073	<50			
Endrin	<50 µg/kg	TM073	<50			
p,p-TDE (DDD)	<50 µg/kg	TM073	<50			
Ethion	<50 µg/kg	TM073	<50			
Endosulphan II	<50 µg/kg	TM073	<50			
p,p-DDT	<50 µg/kg	TM073	<50			
p,p-Methoxychlor	<50 µg/kg	TM073	<50			
Endosulphan sulphate	<50 µg/kg	TM073	<50			
Azinphos-methyl	<50 µg/kg	TM073	<50			



CERTIFICATE OF ANALYSIS

Validated

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Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH25	MS-BH25	MS-BH25			
#	ISO17025 accredited.		MS-BH25	MS-BH25	MS-BH25			
M	mCERTS accredited.		ADS4220926005	ADS4220926009	ADS4220927002			
aq	Aqueous / settled sample.	Depth (m)	0.40 - 0.40	0.75 - 0.75	1.50 - 1.50			
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
tot.unfilt	Total / unfiltered sample.	Date Sampled	26/09/2022	26/09/2022	26/09/2022			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07:49	07:49	07:48			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	01/10/2022	01/10/2022	01/10/2022			
(F)	Trigger breach confirmed	SDG Ref	221005-86	221005-86	221005-86			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	26971370	26971377	26971344			
		AGS Reference	ES5	ES9	ES13			
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	76.5	79.7	86			
Acenaphthene-d10 % recovery**	%	TM218	77.7	82.6	83.4			
Phenanthrene-d10 % recovery**	%	TM218	64.3	83.9	84.8			
Chrysene-d12 % recovery**	%	TM218	38.6	73.4	94.7			
Perylene-d12 % recovery**	%	TM218	28.6	73.7	88.2			
Naphthalene	<9 µg/kg	TM218	<9	90.5	<9			
			@ M	M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	23.2	<12			
			@ M	M	M			
Acenaphthene	<8 µg/kg	TM218	<8	37.8	<8			
			@ M	M	M			
Fluorene	<10 µg/kg	TM218	<10	53.9	<10			
			@ M	M	M			
Phenanthrene	<15 µg/kg	TM218	<15	559	140			
			@ M	M	M			
Anthracene	<16 µg/kg	TM218	<16	181	37			
			@ M	M	M			
Fluoranthene	<17 µg/kg	TM218	<17	835	438			
			@ M	M	M			
Pyrene	<15 µg/kg	TM218	<15	697	389			
			@ M	M	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	326	183			
			@ M	M	M			
Chrysene	<10 µg/kg	TM218	<10	289	183			
			@ M	M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	277	156			
			@ M	M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	133	62.7			
			@ M	M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	280	119			
			@ M	M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	191	77.8			
			@ M	M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	35.1	<23			
			@ M	M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	180	64.3			
			@ M	M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	4190	1850			



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VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH25	MS-BH25	MS-BH25			
#	ISO17025 accredited.		ADS4220926005	ADS4220926009	ADS4220927002			
M	mCERTS accredited.		0.40 - 0.40	0.75 - 0.75	1.50 - 1.50			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	26/09/2022	26/09/2022	26/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	07:49	07:49	07:48			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/10/2022	01/10/2022	01/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221005-86	221005-86	221005-86			
	(F) Trigger breach confirmed	SDG Ref	26971370	26971377	26971344			
	1-4*\$@ Sample deviation (see appendix)	Lab Sample No.(s)	ES5	ES9	ES13			
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	53.8	103	81.1	@	@	@
Toluene-d8**	%	TM116	83.5	92.7	97.4	@	@	@
4-Bromofluorobenzene**	%	TM116	78.5	74.8	94.5	@	@	@
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	<10	<10	@ M	@ M	@ M
Benzene	<9 µg/kg	TM116	<9	<9	<9	@ M	@ M	@ M
Toluene	<7 µg/kg	TM116	<7	<7	<7	@ M	@ M	@ M
Ethylbenzene	<4 µg/kg	TM116	<4	<4	<4	@ M	@ M	@ M
p/m-Xylene	<10 µg/kg	TM116	<10	<10	<10	@ #	@ #	@ #
o-Xylene	<10 µg/kg	TM116	<10	<10	<10	@ M	@ M	@ M
Sum of BTEX	<40 µg/kg	TM116	<40	<40	<40	@	@	@



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Report Number: 665670
Location: Keadby 3

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Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH25ES5 0.40 - 0.40 SOLID 26/09/2022 00:00:00 01/10/2022 10:00:00 221005-86 26971370 TM048	14/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH25ES9 0.75 - 0.75 SOLID 26/09/2022 00:00:00 01/10/2022 10:00:00 221005-86 26971377 TM048	13/10/2022	Emily Anderton	Fibre bundle in soil	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH25ES13 1.50 - 1.50 SOLID 26/09/2022 00:00:00 01/10/2022 10:00:00 221005-86 26971344 TM048	14/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Asbestos Quantification - Full

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Additional Asbestos Components	Analysts Comments	Asbestos Quantification - Gravimetric - %	Asbestos Quantification - PCOM	Asbestos Quantification - Total - %
Cust. Sample Ref.	MS-BH25ES9	None (#)	-	<0.001 (#)	<0.001 (#)	<0.001 (#)
Depth (m)	0.75 - 0.75					
Sample Type	SOLID					
Date Sampled	26/09/2022 00:00:00					
Date Received	01/10/2022 10:00:00					
SDG	221005-86					
Original Sample	26971377					
Method Number	TM304					



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Location: Keadby 3

Superseded Report: 665242

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM304	HSE Contract research Report no 83/1996	Asbestos Quantification in Soil: Fibres identified by morphology only
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 221005-86
Client Ref.: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Test Completion Dates

Lab Sample No(s)	26971337	26971344	26971370	26971377
Customer Sample Ref.	MS-BH25	MS-BH25	MS-BH25	MS-BH25
AGS Ref.	ES10	ES13	ES5	ES9
Depth	1.20 - 1.20	1.50 - 1.50	0.40 - 0.40	0.75 - 0.75
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	19-Oct-2022			
Ammonium Soil by Titration		10-Oct-2022	10-Oct-2022	10-Oct-2022
Anions by Kone (soil)		14-Oct-2022	14-Oct-2022	14-Oct-2022
Asbestos ID in Solid Samples		14-Oct-2022	14-Oct-2022	13-Oct-2022
Asbestos Quantification - Full				24-Oct-2022
Chromium III		13-Oct-2022	13-Oct-2022	13-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate		10-Oct-2022	10-Oct-2022	10-Oct-2022
Easily Liberated Sulphide		11-Oct-2022	11-Oct-2022	11-Oct-2022
Elemental Sulphur		11-Oct-2022	13-Oct-2022	13-Oct-2022
EPH		11-Oct-2022	11-Oct-2022	11-Oct-2022
EPH by GCxGC-FID		07-Oct-2022	07-Oct-2022	07-Oct-2022
GRO by GC-FID (S)		11-Oct-2022	11-Oct-2022	11-Oct-2022
Hexavalent Chromium (s)		13-Oct-2022	13-Oct-2022	13-Oct-2022
Metals in solid samples by OES		12-Oct-2022	13-Oct-2022	12-Oct-2022
NO3, NO2 and TON by KONE (s)		14-Oct-2022	14-Oct-2022	14-Oct-2022
OC OP Pesticides and Triazine Herb	14-Oct-2022			
PAH by GCMS		10-Oct-2022	14-Oct-2022	07-Oct-2022
PCBs by GCMS		07-Oct-2022		
pH		10-Oct-2022	10-Oct-2022	10-Oct-2022
Phenols by HPLC (S)		10-Oct-2022	10-Oct-2022	10-Oct-2022
Sample description	06-Oct-2022	06-Oct-2022	06-Oct-2022	06-Oct-2022
Total Organic Carbon		13-Oct-2022	11-Oct-2022	12-Oct-2022
Total Sulphate		14-Oct-2022	10-Oct-2022	10-Oct-2022
VOC MS (S)		11-Oct-2022	12-Oct-2022	11-Oct-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR22A2498	Issue Date	: 19-Oct-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]s@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 221005-86	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 10-Oct-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 10-Oct-2022 - 19-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		26973747		----		----	
				Laboratory sample ID		MS-BH25		----		----	
				Client sampling date / time		PR22A2498001		----		----	
						06-Oct-2022 07:36		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	79.9	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.



CERTIFICATE OF ANALYSIS

SDG: 221005-86
Client Ref: F212561

Report Number: 665670
Location: Keadby 3

Superseded Report: 665242

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221005-89
Your Reference:	F212561
Location:	Keadby 3
Report No:	664875
Order Number:	386/121917/CP

We received 4 samples on Saturday October 01, 2022 and 1 of these samples were scheduled for analysis which was completed on Friday October 14, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

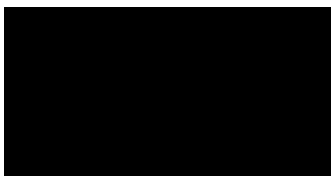
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26971399	DS106	ES2	0.10 - 0.10	30/09/2022
26971406	DS106	ES5	0.40 - 0.40	30/09/2022
26971416	DS106	ES7	0.70 - 0.70	30/09/2022
26971424	DS106	ES8	1.20 - 1.20	30/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	26971399	DS106	ES2	0.10 - 0.10	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X			
Chromium III	All	NDPs: 0 Tests: 1	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	26971399	DS106	ES2	0.10 - 0.10	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1			X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26971399	DS106	0.10 - 0.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DS106			
# ISO17025 accredited.			ADS1220928002			
M mCERTS accredited.			0.10 - 0.10			
aq Aqueous / settled sample.			Soil/Solid (S)			
diss.filt Dissolved / filtered sample.			30/09/2022			
tot.unfilt Total / unfiltered sample.			11:19			
* Subcontracted - refer to subcontractor report for accreditation status.			01/10/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221005-89			
(F) Trigger breach confirmed			26971399			
1-4*\$@ Sample deviation (see appendix)			ES2			
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	9.7			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M		
Soil Organic Matter (SOM)	<0.35 %	TM132	6.67	#		
pH	1 pH Units	TM133	8.23	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	M		
Cyanide, Free	<1 mg/kg	TM153	<1	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	14.5			
Arsenic	<0.6 mg/kg	TM181	23	M		
Boron	<0.7 mg/kg	TM181	13.2	#		
Cadmium	<0.02 mg/kg	TM181	0.373	M		
Chromium	<0.9 mg/kg	TM181	14.5	M		
Copper	<1.4 mg/kg	TM181	24.7	M		
Iron	<1000 mg/kg	TM181	26100	#		
Lead	<0.7 mg/kg	TM181	68.1	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	29.2	M		
Selenium	<1 mg/kg	TM181	1.46	#		
Zinc	<1.9 mg/kg	TM181	88.7	M		
Sulphate, Total	<48 mg/kg	TM221	384	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0128			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	1.02			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	<0.004	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	39.8			
EPH (C5-C40)	<35 mg/kg	TM415	36.9			
EPH Surrogate % recovery**	%	TM415	105			



Validated

CERTIFICATE OF ANALYSIS

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
#	ISO17025 accredited.	DS106					
M	mCERTS accredited.	ADS1220928002					
aq	Aqueous / settled sample.	0.10 - 0.10					
dis.fil	Dissolved / filtered sample.	Soil/Solid (S)					
tot.unfilt	Total / unfiltered sample.	30/09/2022					
*	Subcontracted - refer to subcontractor report for accreditation status.	11:19					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	01/10/2022					
(F)	Trigger breach confirmed	221005-89					
1-4*§	Sample deviation (see appendix)	26971399					
		ES2					
		Lab Sample No.(s)					
		AGS Reference					
Component	LOD/Units	Method					
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	36.9	M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89

Report Number: 664875

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS106			
# ISO17025 accredited.			ADS1220928002			
M mCERES accredited.			0.10 - 0.10			
aq Aqueous / settled sample.		Depth (m)	Soil/Solid (S)			
diss.filt Dissolved / filtered sample.		Sample Type	30/09/2022			
tot.unfilt Total / unfiltered sample.		Date Sampled	11:19			
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	01/10/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221005-89			
(F) Trigger breach confirmed		SDG Ref	26971399			
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)	ES2			
		AGS Reference				
Component	LOD/Units	Method				
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS106				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220928002				
M	mCERTS accredited.		0.10 - 0.10				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		30/09/2022				
tot.unfilt	Total / unfiltered sample.		11:19				
*	Subcontracted - refer to subcontractor report for accreditation status.		01/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221005-89				
(F)	Trigger breach confirmed		26971399				
1-4*\$@	Sample deviation (see appendix)		ES2				
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	77.8				
Acenaphthene-d10 % recovery**	%	TM218	84.7				
Phenanthrene-d10 % recovery**	%	TM218	79.5				
Chrysene-d12 % recovery**	%	TM218	70				
Perylene-d12 % recovery**	%	TM218	70.1				
Naphthalene	<9 µg/kg	TM218	14.1	M			
Acenaphthylene	<12 µg/kg	TM218	<12	M			
Acenaphthene	<8 µg/kg	TM218	<8	M			
Fluorene	<10 µg/kg	TM218	<10	M			
Phenanthrene	<15 µg/kg	TM218	42	M			
Anthracene	<16 µg/kg	TM218	<16	M			
Fluoranthene	<17 µg/kg	TM218	25.7	M			
Pyrene	<15 µg/kg	TM218	22.4	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	M			
Chrysene	<10 µg/kg	TM218	22.3	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	22.4	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	149				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
 Client Ref.: F212561

Report Number: 664875
 Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend	Customer Sample Ref.	Depth (m)	DS106				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.flit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS106 ADS1220928002 0.10 - 0.10 Soil/Solid (S) 30/09/2022 11:19 01/10/2022 221005-89 26971399 ES2					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	102				
Toluene-d8**	%	TM116	97.4				
4-Bromofluorobenzene**	%	TM116	92.7				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	M			
Benzene	<9 µg/kg	TM116	<180	M			
Toluene	<7 µg/kg	TM116	<140	M			
Ethylbenzene	<4 µg/kg	TM116	<80	M			
p/m-Xylene	<10 µg/kg	TM116	<200	#			
o-Xylene	<10 µg/kg	TM116	<200	M			
Sum of BTEX	<40 µg/kg	TM116	<800				

16:47:40 14/10/2022

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CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
14/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	DS106ES2
Depth (m)	0.10 - 0.10
Sample Type	SOLID
Date Sampled	30/09/2022 00:00:00
Date Received	01/10/2022 10:00:00
SDG	221005-89
Original Sample	26971399
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221005-89
Client Ref.: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26971399
Customer Sample Ref.	DS106
AGS Ref.	ES2
Depth	0.10 - 0.10
Type	Soil/Solid (S)

Ammonium Soil by Titration	10-Oct-2022
Anions by Kone (soil)	14-Oct-2022
Asbestos ID in Solid Samples	14-Oct-2022
Chromium III	13-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2022
Easily Liberated Sulphide	11-Oct-2022
Elemental Sulphur	13-Oct-2022
EPH	11-Oct-2022
EPH by GCxGC-FID	07-Oct-2022
GRO by GC-FID (S)	11-Oct-2022
Hexavalent Chromium (s)	13-Oct-2022
Metals in solid samples by OES	13-Oct-2022
NO3, NO2 and TON by KONE (s)	14-Oct-2022
PAH by GCMS	12-Oct-2022
pH	10-Oct-2022
Phenols by HPLC (S)	10-Oct-2022
Sample description	06-Oct-2022
Total Organic Carbon	11-Oct-2022
Total Sulphate	10-Oct-2022
VOC MS (S)	12-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221005-89
Client Ref: F212561

Report Number: 664875
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	17 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221006-100
Your Reference:	F212561
Location:	Keadby 3
Report No:	665007
Order Number:	386/121917/CP

We received 4 samples on Thursday October 06, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday October 17, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26976813	DS105	ES9	1.50 - 2.00	28/09/2022
26976761	DS105	ES10	2.50 - 3.00	28/09/2022
26976775	DS105	ES11	3.50 - 4.00	28/09/2022
26976792	DS105	ES12	4.50 - 5.00	28/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26976813	26976775		
	Customer Sample Reference	DS105	DS105	DS105	DS105
	AGS Reference	ES9	ES9	ES11	ES11
	Depth (m)	1.50 - 2.00	1.50 - 2.00	3.50 - 4.00	3.50 - 4.00
	Container	1kg TUB with Handle (ALE210)	250g Amber Jar (ALE260)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
	Sample Type	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 1		X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X
Anions by Kone (w)	All	NDPs: 0 Tests: 1		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X	X	
CEN Readings	All	NDPs: 0 Tests: 1		X	
Chromium III	All	NDPs: 0 Tests: 3	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1		X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1		X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X
EPH	All	NDPs: 0 Tests: 2	X		X
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X
EPH CWG GC (S)	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	26976813	26976775	Customer Sample Reference	DS105	DS105
	AGS Reference	ES9	ES11			
	Depth (m)	1.50 - 2.00	3.50 - 4.00			
	Container	1kg TUB with Handle (ALE210)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE260)	
	Sample Type	S	S	S	S	
	GRO by GC-FID (S)	All	NDPs: 0 Tests: 2	X	X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X	X		
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1		X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1		X		
Mercury Dissolved	All	NDPs: 0 Tests: 1		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X	X		
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X	X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X	X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1		X		
pH	All	NDPs: 0 Tests: 2	X	X		
pH Value of Filtered Water	All	NDPs: 0 Tests: 1		X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X	X		
Sample description	All	NDPs: 0 Tests: 2	X	X		
Total Organic Carbon	All	NDPs: 0 Tests: 2	X	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	26976813	DS105	ES9	1.50 - 2.00	1kg TUB with Handle (ALE210)	S
	26976775	DS105	ES11	3.50 - 4.00	250g Amber Jar (ALE210)	S
	1kg TUB with Handle (ALE260)	S	250g Amber Jar (ALE210)	S	1kg TUB with Handle (ALE260)	S
	S	S	S	S	S	S
	S	S	S	S	S	S
	S	S	S	S	S	S
Total Sulphate	All	NDPs: 0 Tests: 2	X	X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 2	X	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26976775	DS105	3.50 - 4.00	Light Brown	Sandy Silt Loam	Stones	None
26976813	DS105	1.50 - 2.00	Dark Brown	Sandy Silt Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DS105	DS105			
#	ISO17025 accredited.		F-VU2EVB-QZF1	F-S93EVB-CS90			
M	mCERTS accredited.		1.50 - 2.00	3.50 - 4.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	08:30	10:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	06/10/2022	06/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221006-100	221006-100			
	(F) Trigger breach confirmed	SDG Ref	26976813	26976775			
	1-4* Sample deviation (see appendix)	Lab Sample No.(s)	ES9	ES11			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	17	17			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	20	16.6	#	#	
pH	1 pH Units	TM133	8.44	8.6	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	27.8	26.3			
Arsenic	<0.6 mg/kg	TM181	113	92.9	M	M	
Boron	<0.7 mg/kg	TM181	30.1	33.9	#	#	
Cadmium	<0.02 mg/kg	TM181	0.326	0.304	M	M	
Chromium	<0.9 mg/kg	TM181	27.8	26.3	M	M	
Copper	<1.4 mg/kg	TM181	83.5	72.1	M	M	
Iron	<1000 mg/kg	TM181	26200	25500	#	#	
Lead	<0.7 mg/kg	TM181	43.3	39	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	51.4	47.2	M	M	
Selenium	<1 mg/kg	TM181	2.3	2.85	#	#	
Zinc	<1.9 mg/kg	TM181	49.4	46.1	M	M	
Sulphate, Total	<48 mg/kg	TM221	314	360	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.0105	0.012			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1	<0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0173	0.0245	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	7.01	7.2			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35			
EPH Surrogate % recovery**	%	TM415	99	104			



CERTIFICATE OF ANALYSIS

SDG: 221006-100

Report Number: 665007

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend		Customer Sample Ref.	Customer Sample Ref.				
# ISO17025 accredited.	M		DS105	DS105			
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS105 F-VU2EVB-OZF1 1.50 - 2.00 Soil/Solid (S) 28/09/2022 08:30 06/10/2022 221006-100 26976813 ES9	DS105 F-S93EVB-CS90 3.50 - 4.00 Soil/Solid (S) 28/09/2022 10:00 06/10/2022 221006-100 26976775 ES11			
Component	LOD/Units	Method					
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	<35	M	M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS105	DS105			
#	ISO17025 accredited.		F-VU2EVB-QZF1	F-S93EVB-CS90			
M	mCERTS accredited.		1.50 - 2.00	3.50 - 4.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.	Sample Type	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	08:30	10:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	06/10/2022	06/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221006-100	221006-100			
(F)	Trigger breach confirmed	SDG Ref	26976813	26976775			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES9	ES11			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	72.1	43.9			
Acenaphthene-d10 % recovery**	%	TM218	76.3	47.3			
Phenanthrene-d10 % recovery**	%	TM218	52.8	16.2			
Chrysene-d12 % recovery**	%	TM218	19.9	2.89			
Perylene-d12 % recovery**	%	TM218	6.37	0.95			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	DS105					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-VU2EVB-QZF1					
M	mCERTS accredited.		1.50 - 2.00					
aq	Aqueous / settled sample.		Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.		28/09/2022					
tot.unfilt	Total / unfiltered sample.		08:30					
	* Subcontracted - refer to subcontractor report for accreditation status.		06/10/2022					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221006-100					
(F)	Trigger breach confirmed		26976813					
1-4*#	Sample deviation (see appendix)		ES9					
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	25.2					
			4 @					
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10					
			4 @					
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10					
			4 @					
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10					
			4 @					
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000					
			#					
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000					
			#					
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000					
			#					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10					
			4 @					
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10					
			4 @					
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10					
			4 @					
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000					
			#					
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000					
			#					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000					
			#					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50					
			4 @					
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50					
			4 @					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20					
			4 @					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.		DS105	DS105			
#	ISO17025 accredited.			F-VU2EVB-QZF1	F-S93EVB-CS90			
M	mCERTS accredited.			1.50 - 2.00	3.50 - 4.00			
aq	Aqueous / settled sample.	Depth (m)		Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type		28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled		08:30	10:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time		06/10/2022	06/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received		221006-100	221006-100			
(F)	Trigger breach confirmed	SDG Ref		26976813	26976775			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)		ES9	ES11			
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	133	137				
			@	@				
Toluene-d8**	%	TM116	95.1	94.1				
			@	@				
4-Bromofluorobenzene**	%	TM116	77.7	70.6				
			@	@				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<200				
			@ M	@ M				
Benzene	<9 µg/kg	TM116	<180	<180				
			@ M	@ M				
Toluene	<7 µg/kg	TM116	<140	<140				
			@ M	@ M				
Ethylbenzene	<4 µg/kg	TM116	<80	<80				
			@ M	@ M				
p/m-Xylene	<10 µg/kg	TM116	<200	<200				
			@ #	@ #				
o-Xylene	<10 µg/kg	TM116	<200	<200				
			@ M	@ M				
Sum of Detected Xylenes	<0.02 mg/kg	TM116	<0.4					
			@					
Sum of BTEX	<40 µg/kg	TM116	<800	<800				
			@	@				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS105ES9 1.50 - 2.00 SOLID 28/09/2022 00:00:00 06/10/2022 05:00:00 221006-100 26976813 TM048	17/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS105ES11 3.50 - 4.00 SOLID 28/09/2022 00:00:00 06/10/2022 05:00:00 221006-100 26976775 TM048	17/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

 SDG: 221006-100
 Client Ref.: F212561

 Report Number: 665007
 Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23.1
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.3
Particle Size <4mm	>95%		

Case	
SDG	221006-100
Lab Sample Number(s)	26976775
Sampled Date	28-Sep-2022
Customer Sample Ref.	DS105 ES11
Depth (m)	3.50 - 4.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.0507	<0.003	0.101	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
pH Value of Filtered Water	8.3	<0.001	-	-
Sulphate (soluble)	25.6	<2	51.2	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.711	<0.01	1.42	<0.02
Arsenic	0.142	<0.00122	0.284	<0.00244
Nitrate as NO3	3.77	<0.3	7.54	<0.6
Total Ammonium Low as NH4	0.914	<0.01	1.83	<0.02
Boron	0.686	<0.01	1.37	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0416	<0.001	0.0832	<0.002
Copper	0.000523	<0.0003	0.00105	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	0.0561	<0.001	0.112	<0.002
Zinc	<0.001	<0.001	<0.002	<0.002
Calcium (Dis.Filt) mg/l	27	<0.2	54	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	104	<0.65	208	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	07-Oct-2022
pH (pH Units)	8.17
Conductivity (µS/cm)	112.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

17/10/2022 16:18:03

16:17:48 17/10/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23.1
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.3
Particle Size <4mm	>95%		

Case	
SDG	221006-100
Lab Sample Number(s)	26976775
Sampled Date	28-Sep-2022
Customer Sample Ref.	DS105 ES11
Depth (m)	3.50 - 4.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	07-Oct-2022
pH (pH Units)	8.17
Conductivity (µS/cm)	112.00
Temperature (°C)	20.80
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-100
Client Ref.: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26976775	26976813
Customer Sample Ref.	DS105	DS105
AGS Ref.	ES11	ES9
Depth	3.50 - 4.00	1.50 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low	12-Oct-2022	
Ammonium Soil by Titration	10-Oct-2022	10-Oct-2022
Anions by Kone (soil)	17-Oct-2022	17-Oct-2022
Anions by Kone (w)	17-Oct-2022	
Asbestos ID in Solid Samples	17-Oct-2022	17-Oct-2022
CEN 2:1 Leachate (1 Stage)	07-Oct-2022	
CEN Readings	12-Oct-2022	
Chromium III	14-Oct-2022	14-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2022	10-Oct-2022
Dissolved Metals by ICP-MS	14-Oct-2022	
Dissolved Organic/Inorganic Carbon	12-Oct-2022	
Easily Liberated Sulphide	11-Oct-2022	11-Oct-2022
Elemental Sulphur	13-Oct-2022	13-Oct-2022
EPH	17-Oct-2022	17-Oct-2022
EPH by GCxGC-FID	10-Oct-2022	10-Oct-2022
EPH CWG GC (S)		10-Oct-2022
GRO by GC-FID (S)	17-Oct-2022	17-Oct-2022
Hexavalent Chromium (s)	14-Oct-2022	14-Oct-2022
Low Level Cyanide (W)	12-Oct-2022	
Low Level Hexavalent Chromium (w)	12-Oct-2022	
Mercury Dissolved	13-Oct-2022	
Metals in solid samples by OES	12-Oct-2022	12-Oct-2022
Moisture at 105C	07-Oct-2022	
Nitrite by Kone (w)	12-Oct-2022	
NO3, NO2 and TON by KONE (s)	17-Oct-2022	17-Oct-2022
PAH by GCMS	17-Oct-2022	14-Oct-2022
PAH Spec MS - Aqueous (W)	12-Oct-2022	
pH	12-Oct-2022	12-Oct-2022
pH Value of Filtered Water	14-Oct-2022	
Phenols by HPLC (S)	10-Oct-2022	10-Oct-2022
Sample description	06-Oct-2022	06-Oct-2022
Total Organic Carbon	11-Oct-2022	13-Oct-2022
Total Sulphate	10-Oct-2022	10-Oct-2022
TPH CWG GC (S)		17-Oct-2022
VOC MS (S)	17-Oct-2022	17-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221006-100
Client Ref: F212561

Report Number: 665007
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	17 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221006-101
Your Reference:	F212561
Location:	Keadby 3
Report No:	665008
Order Number:	386/121917/CP

We received 4 samples on Thursday October 06, 2022 and 1 of these samples were scheduled for analysis which was completed on Monday October 17, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

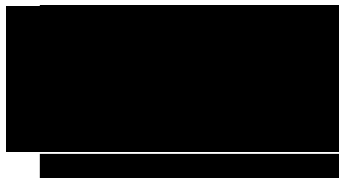
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26976849	DS109	ES2	0.10 - 0.10	28/09/2022
26976862	DS109	ES5	0.40 - 0.40	23/09/2022
26976873	DS109	ES7	0.70 - 0.70	23/09/2022
26976885	DS109	ES8	1.20 - 1.20	23/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)				
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		26976885		
	Customer Sample Reference		DS109		
	AGS Reference		ES8		
	Depth (m)		1.20 - 1.20		
	Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type		S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	26976885	DS109	ES8	1.20 - 1.20	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1				X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26976885	DS109	1.20 - 1.20	Grey	Silty Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		DS109 ADS1220928016 1.20 - 1.20 Soil/Solid (S) 23/09/2022 12:16 06/10/2022 221006-101 26976885 ES8			
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	16				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	10	#			
pH	1 pH Units	TM133	8.48	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	@ M			
Cyanide, Free	<1 mg/kg	TM153	<1	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	21.8				
Arsenic	<0.6 mg/kg	TM181	77.4	M			
Boron	<0.7 mg/kg	TM181	31.5	#			
Cadmium	<0.02 mg/kg	TM181	0.276	M			
Chromium	<0.9 mg/kg	TM181	21.8	M			
Copper	<1.4 mg/kg	TM181	63.4	M			
Iron	<1000 mg/kg	TM181	21400	#			
Lead	<0.7 mg/kg	TM181	40	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	42.2	M			
Selenium	<1 mg/kg	TM181	2	#			
Zinc	<1.9 mg/kg	TM181	47.5	M			
Sulphate, Total	<48 mg/kg	TM221	592	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0197				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.1				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0253	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.84				
EPH (C5-C40)	<35 mg/kg	TM415	<35				
EPH Surrogate % recovery**	%	TM415	95.3				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS109				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220928016				
M	mCERTS accredited.		1.20 - 1.20				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		23/09/2022				
tot.unfilt	Total / unfiltered sample.		12:16				
*	Subcontracted - refer to subcontractor report for accreditation status.		06/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221006-101				
(F)	Trigger breach confirmed		26976885				
1-4*\$@	Sample deviation (see appendix)		ES8				
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	55.7				
Acenaphthene-d10 % recovery**	%	TM218	58.9				
Phenanthrene-d10 % recovery**	%	TM218	33.8				
Chrysene-d12 % recovery**	%	TM218	15.6				
Perylene-d12 % recovery**	%	TM218	8.93				
Naphthalene	<9 µg/kg	TM218	<9	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.		DS109					
#	ISO17025 accredited.			ADS1220928016					
M	mCERTS accredited.			1.20 - 1.20					
aq	Aqueous / settled sample.			Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.			23/09/2022					
tot.unfilt	Total / unfiltered sample.			12:16					
	* Subcontracted - refer to subcontractor report for accreditation status.			06/10/2022					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221006-101					
	(F) Trigger breach confirmed			26976885					
	1-4*\$@ Sample deviation (see appendix)			ES8					
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)
Dibromofluoromethane**	%	TM116							
									123 @
Toluene-d8**	%	TM116							98.6 @
									88.1 @
4-Bromofluorobenzene**	%	TM116							<200 @ M
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116							<180 @ M
Benzene	<9 µg/kg	TM116							<140 @ M
Toluene	<7 µg/kg	TM116							<80 @ M
Ethylbenzene	<4 µg/kg	TM116							<200 @ #
p/m-Xylene	<10 µg/kg	TM116							<200 @ M
o-Xylene	<10 µg/kg	TM116							<800 @
Sum of BTEX	<40 µg/kg	TM116							



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
17/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	DS109ES8
Depth (m)	1.20 - 1.20
Sample Type	SOLID
Date Sampled	23/09/2022 00:00:00
Date Received	06/10/2022 05:00:00
SDG	221006-101
Original Sample	26976885
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221006-101
Client Ref.: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	26976885
Customer Sample Ref.	DS109
AGS Ref.	ES8
Depth	1.20 - 1.20
Type	Soil/Solid (S)

Ammonium Soil by Titration	10-Oct-2022
Anions by Kone (soil)	17-Oct-2022
Asbestos ID in Solid Samples	17-Oct-2022
Chromium III	14-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2022
Easily Liberated Sulphide	11-Oct-2022
Elemental Sulphur	13-Oct-2022
EPH	17-Oct-2022
EPH by GCxGC-FID	10-Oct-2022
GRO by GC-FID (S)	17-Oct-2022
Hexavalent Chromium (s)	14-Oct-2022
Metals in solid samples by OES	12-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022
PAH by GCMS	17-Oct-2022
pH	12-Oct-2022
Phenols by HPLC (S)	10-Oct-2022
Sample description	06-Oct-2022
Total Organic Carbon	12-Oct-2022
Total Sulphate	10-Oct-2022
VOC MS (S)	17-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221006-101
Client Ref: F212561

Report Number: 665008
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-21
Your Reference: F212561
Location: Keadby 3
Report No: 665748
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665539 in its entirety.

We received 1 sample on Wednesday October 12, 2022 and 1 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

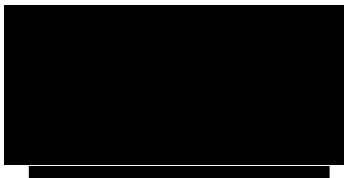
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-21
Client Ref.: F212561

Report Number: 665748
Location: Keadby 3

Superseded Report: 665539

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008130	DS111	ES12	4.00 - 4.70	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

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SDG: 221013-21
Client Ref.: F212561

Report Number: 665748
Location: Keadby 3

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Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27008130	DS111	ES12	4.00 - 4.70	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1		X		
Chromium III	All	NDPs: 0 Tests: 1	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



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Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27008130	DS111	ES12	4.00 - 4.70	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
	Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X		
	Sample description	All	NDPs: 0 Tests: 1	X		
	Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
	Total Sulphate	All	NDPs: 0 Tests: 1	X		
	VOC MS (S)	All	NDPs: 0 Tests: 1			X



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008130	DS111	4.00 - 4.70	Dark Brown	Silty Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Superseded Report: 665539

Results Legend		Customer Sample Ref.	DS111			
#	ISO17025 accredited.		F-UAPOVB-QA6K			
M	mCERTS accredited.		4.00 - 4.70			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:30			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-21			
(F)	Trigger breach confirmed	SDG Ref	27008130			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES12			
		AGS Reference				
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	25			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	9.79	#		
pH	1 pH Units	TM133	11	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	@ M		
Cyanide, Free	<1 mg/kg	TM153	<1	@ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	13.1			
Arsenic	<0.6 mg/kg	TM181	53.3	M		
Boron	<0.7 mg/kg	TM181	47.4	#		
Cadmium	<0.02 mg/kg	TM181	0.132	M		
Chromium	<0.9 mg/kg	TM181	13.1	M		
Copper	<1.4 mg/kg	TM181	69.2	M		
Iron	<1000 mg/kg	TM181	43000	#		
Lead	<0.7 mg/kg	TM181	22.8	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	35.3	M		
Selenium	<1 mg/kg	TM181	2.94	#		
Zinc	<1.9 mg/kg	TM181	36.5	M		
Sulphate, Total	<48 mg/kg	TM221	2270	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0756			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.16			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.307	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	1.45			
EPH (C5-C40)	<35 mg/kg	TM415	<35			
EPH Surrogate % recovery**	%	TM415	105			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-21
Client Ref.: F212561

Report Number: 665748
Location: Keadby 3

Superseded Report: 665539

Results Legend <small># ISO17025 accredited.</small> <small>M mCERTS accredited.</small> <small>aq Aqueous / settled sample.</small> <small>diss.filt Dissolved / filtered sample.</small> <small>tot.unfilt Total / unfiltered sample.</small> <small>* Subcontracted - refer to subcontractor report for accreditation status.</small> <small>** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.</small> <small>(F) Trigger breach confirmed</small> <small>1-4*\$@ Sample deviation (see appendix)</small>	<small>Customer Sample Ref.</small> Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS111 F-UAPOVB-QA6K 4.00 - 4.70 Soil/Solid (S) 29/09/2022 09:30 12/10/2022 221013-21 27008130 ES12						
Component	LOD/Units	Method						
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 @ M					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-21
Client Ref.: F212561

Report Number: 665748
Location: Keadby 3

Superseded Report: 665539

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS111				
#	ISO17025 accredited.		F-UAPOVB-QA6K				
M	mCERTS accredited.		4.00 - 4.70				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:30				
	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-21				
(F)	Trigger breach confirmed	SDG Ref	27008130				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES12				
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	4 @			



CERTIFICATE OF ANALYSIS

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Report Number: 665748
Location: Keadby 3

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PAH by GCMS

Results Legend		Customer Sample Ref.	DS111				
#	ISO17025 accredited.		F-UAPOVB-QA6K				
M	mCERTS accredited.		4.00 - 4.70				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:30				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-21				
(F)	Trigger breach confirmed	SDG Ref	27008130				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES12				
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	52.9				
Acenaphthene-d10 % recovery**	%	TM218	54.1				
Phenanthrene-d10 % recovery**	%	TM218	22.7				
Chrysene-d12 % recovery**	%	TM218	3.07				
Perylene-d12 % recovery**	%	TM218	0.67				
Naphthalene	<9 µg/kg	TM218	18.1	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-21
Client Ref.: F212561

Report Number: 665748
Location: Keadby 3

Superseded Report: 665539

VOC MS (S)

Results Legend		Customer Sample Ref.					
<small># ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)</small>		<small>Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference</small>	<small>DS111 F-UAPOVB-QA6K 4.00 - 4.70 Soil/Solid (S) 29/09/2022 09:30 12/10/2022 221013-21 27008130 ES12</small>				
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	124	@			
Toluene-d8**	%	TM116	98.2	@			
4-Bromofluorobenzene**	%	TM116	81.9	@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M			
Benzene	<9 µg/kg	TM116	<180	@ M			
Toluene	<7 µg/kg	TM116	<140	@ M			
Ethylbenzene	<4 µg/kg	TM116	<80	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	@ #			
o-Xylene	<10 µg/kg	TM116	<200	@ M			
Sum of BTEX	<40 µg/kg	TM116	<800	@			



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Report Number: 665748
Location: Keadby 3

Superseded Report: 665539

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS111ES12 4.00 - 4.70 SOLID 29/09/2022 00:00:00 12/10/2022 05:00:00 221013-21 27008130 TM048	24/10/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Test Completion Dates

Lab Sample No(s)	27008130
Customer Sample Ref.	DS111
AGS Ref.	ES12
Depth	4.00 - 4.70
Type	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022
Chromium III	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022
Easily Liberated Sulphide	20-Oct-2022
Elemental Sulphur	20-Oct-2022
EPH	24-Oct-2022
EPH by GCxGC-FID	19-Oct-2022
GRO by GC-FID (S)	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022
PAH by GCMS	20-Oct-2022
pH	21-Oct-2022
Phenols by HPLC (S)	17-Oct-2022
Sample description	13-Oct-2022
Total Organic Carbon	20-Oct-2022
Total Sulphate	14-Oct-2022
VOC MS (S)	21-Oct-2022



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Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 09 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-23
Your Reference: F212561
Location: Keadby 3
Report No: 667796
Order Number: 386/121917/CP

This report has been revised and directly supersedes 666564 in its entirety.

We received 4 samples on Wednesday October 12, 2022 and 2 of these samples were scheduled for analysis which was completed on Wednesday November 09, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008143	DS101	ES2	0.10 - 0.10	29/09/2022
27008150	DS101	ES5	0.40 - 0.40	29/09/2022
27008157	DS101	ES7	0.70 - 0.70	29/09/2022
27008164	DS101	ES8	1.20 - 1.20	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

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SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27008150	DS101	ES5	0.40 - 0.40	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		27008164	DS101	ES8	1.20 - 1.20	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	Ammonium Low	All	NDPs: 0 Tests: 1			X	
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X	
	Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X	
	Anions by Kone (w)	All	NDPs: 0 Tests: 1		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X		X		
CEN Readings	All	NDPs: 0 Tests: 1		X			
Chromium III	All	NDPs: 0 Tests: 3	X	X	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1		X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1		X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Results Legend	Lab Sample No(s)		27008150	27008164		
	Customer Sample Reference		DS101	DS101		
AGS Reference		ES5	ES8			
Depth (m)		0.40 - 0.40	1.20 - 1.20			
Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Sample Type		S	S	S	S	S
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1			X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1			X	
Mercury Dissolved	All	NDPs: 0 Tests: 1			X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1			X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X	
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1			X	
pH	All	NDPs: 0 Tests: 2	X		X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 1			X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X	
Sample description	All	NDPs: 0 Tests: 2	X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X	
Total Sulphate	All	NDPs: 0 Tests: 2	X		X	



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SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

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Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)		27008150		27008164	
	Customer Sample Reference		DS101		DS101	
	AGS Reference		ES5		ES8	
	Depth (m)		0.40 - 0.40		1.20 - 1.20	
	Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
	Sample Type		S	S	S	S
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008150	DS101	0.40 - 0.40	Dark Brown	Sandy Silt Loam	Stones	Vegetation
27008164	DS101	1.20 - 1.20	Dark Brown	Sandy Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Results Legend		Customer Sample Ref.	DS101 ADS1220930005 0.40 - 0.40 Soil/Solid (S) 29/09/2022 17:05 12/10/2022 221013-23 27008150 ES5	DS101 ADS1220930008 1.20 - 1.20 Soil/Solid (S) 29/09/2022 17:20 12/10/2022 221013-23 27008164 ES8			
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	8.7	7.3			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	4.69 #	3.45 #			
pH	1 pH Units	TM133	8.61 M	8.48 M			
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	31.9 @ M	<15 @ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	15.4	11			
Arsenic	<0.6 mg/kg	TM181	63.6 M	46.3 M			
Boron	<0.7 mg/kg	TM181	14.8 #	10.5 #			
Cadmium	<0.02 mg/kg	TM181	0.211 M	0.177 M			
Chromium	<0.9 mg/kg	TM181	15.4 M	11 M			
Copper	<1.4 mg/kg	TM181	122 M	70.9 M			
Iron	<1000 mg/kg	TM181	70100 #	45000 #			
Lead	<0.7 mg/kg	TM181	28.5 M	23 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	59.4 M	42.1 M			
Selenium	<1 mg/kg	TM181	1.77 #	1.08 #			
Zinc	<1.9 mg/kg	TM181	47.5 M	31.1 M			
Sulphate, Total	<48 mg/kg	TM221	528 M	247 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0176	0.00824			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.2	0.11			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0601 M	0.0241 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	5.18	3.45			
EPH (C5-C40)	<35 mg/kg	TM415	47.5	39.7			
EPH Surrogate % recovery**	%	TM415	108	103			



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Results Legend	Customer Sample Ref.	DS101	DS101																																																																																																																																																																																																																																																																																																		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filter Dissolved / filtered sample. tot.unfiltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220930005 0.40 - 0.40 Soil/Solid (S) 29/09/2022 17:05 12/10/2022 221013-23 27008150 ES5	ADS1220930008 1.20 - 1.20 Soil/Solid (S) 29/09/2022 17:20 12/10/2022 221013-23 27008164 ES8																																																																																																																																																																																																																																																																																																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Component</th> <th style="width: 15%;">LOD/Units</th> <th style="width: 15%;">Method</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>EPH>C10-C40 (EH_2D_Total)</td> <td><35 mg/kg</td> <td>TM415</td> <td style="text-align: center;">47.4</td> <td style="text-align: center;">39.7</td> <td style="text-align: center;">@ M</td> <td style="text-align: center;">@ M</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Component	LOD/Units	Method					EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	47.4	39.7	@ M	@ M																																																																																																																																																																																																																																																																																							
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CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23

Report Number: 667796

Superseded Report: 666564

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS101						
#	M		aq	tot.unfilt					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.40	1.20 - 1.20					
			29/09/2022	29/09/2022					
		17:05	17:20						
		12/10/2022	12/10/2022						
		221013-23	221013-23						
		27008150	27008164						
		ES5	ES8						
Component	LOD/Units	Method							
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	53.7 @	<20 @					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

PAH by GCMS

Results Legend		Customer Sample Ref.	DS101	DS101			
#	ISO17025 accredited.		ADS1220930005	ADS1220930008			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	17:05	17:20			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-23	221013-23			
(F)	Trigger breach confirmed	SDG Ref	27008160	27008164			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES5	ES8			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	77.5	80.3			
Acenaphthene-d10 % recovery**	%	TM218	83.9	91.4			
Phenanthrene-d10 % recovery**	%	TM218	79.4	90.3			
Chrysene-d12 % recovery**	%	TM218	58.5	62.3			
Perylene-d12 % recovery**	%	TM218	31.7	32.7			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

ValidatedSDG: 221013-23
Client Ref.: F212561Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

VOC MS (S)

Results Legend		Customer Sample Ref.	DS101	DS101				
#	ISO17025 accredited.		ADS1220930005	ADS1220930008				
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	17:05	17:20				
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-23	221013-23				
(F)	Trigger breach confirmed	SDG Ref	27008160	27008164				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES5	ES8				
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	118 @	121 @				
Toluene-d8**	%	TM116	99.7 @	102 @				
4-Bromofluorobenzene**	%	TM116	84 @	87.3 @				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<200 @ M				
Benzene	<9 µg/kg	TM116	<180 @ M	<180 @ M				
Toluene	<7 µg/kg	TM116	<140 @ M	<140 @ M				
Ethylbenzene	<4 µg/kg	TM116	<80 @ M	<80 @ M				
p/m-Xylene	<10 µg/kg	TM116	<200 @ #	<200 @ #				
o-Xylene	<10 µg/kg	TM116	<200 @ M	<200 @ M				
Sum of BTEX	<40 µg/kg	TM116	<800 @	<800 @				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS101E55 0.40 - 0.40 SOLID 29/09/2022 00:00:00 12/10/2022 05:00:00 221013-23 27008150 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS101E58 1.20 - 1.20 SOLID 29/09/2022 00:00:00 12/10/2022 05:00:00 221013-23 27008164 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.214	Natural Moisture Content (%)	22.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.5
Particle Size <4mm	>95%		

Case	
SDG	221013-23
Lab Sample Number(s)	27008164
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS101 ES8
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.00846	<0.003	0.0169	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	13.5	<2	27	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0118	<0.01	0.0236	<0.02
Arsenic	0.0966	<0.00086	0.193	<0.00172
Nitrate as NO3	2.08	<0.3	4.16	<0.6
Total Ammonium Low as NH4	0.0151	<0.01	0.0302	<0.02
Boron	0.0788	<0.01	0.158	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.00738	<0.001	0.0148	<0.002
Copper	<0.0003	<0.0003	<0.0006	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	0.00228	<0.001	0.00456	<0.002
Zinc	0.00162	<0.001	0.00324	<0.002
Calcium (Dis.Filt) mg/l	29.1	<0.2	58.2	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	82	<0.65	164	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.19
Conductivity (µS/cm)	160
Volume Leachant (Litres)	0.312
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

09/11/2022 10:11:55

10:11:31 09/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.214	Natural Moisture Content (%)	22.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81.5
Particle Size <4mm	>95%		

Case	
SDG	221013-23
Lab Sample Number(s)	27008164
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS101 ES8
Depth (m)	1.20 - 1.20

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.19
Conductivity (µS/cm)	160
Volume Leachant (Litres)	0.312
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

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CERTIFICATE OF ANALYSIS

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SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-23
Client Ref.: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Test Completion Dates

Lab Sample No(s)	27008150	27008164
Customer Sample Ref.	DS101	DS101
AGS Ref.	ES5	ES8
Depth	0.40 - 0.40	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low		19-Oct-2022
Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Anions by Kone (w)		20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022	24-Oct-2022
CEN 2:1 Leachate (1 Stage)		14-Oct-2022
CEN Readings		19-Oct-2022
Chromium III	20-Oct-2022	25-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022
Dissolved Metals by ICP-MS		09-Nov-2022
Dissolved Organic/Inorganic Carbon		19-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	20-Oct-2022
Elemental Sulphur	20-Oct-2022	20-Oct-2022
EPH	21-Oct-2022	21-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	21-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Low Level Cyanide (W)		25-Oct-2022
Low Level Hexavalent Chromium (w)		20-Oct-2022
Mercury Dissolved		20-Oct-2022
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022
Moisture at 105C		14-Oct-2022
Nitrite by Kone (w)		19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022	17-Oct-2022
PAH by GCMS	19-Oct-2022	20-Oct-2022
PAH Spec MS - Aqueous (W)		20-Oct-2022
pH	21-Oct-2022	21-Oct-2022
pH Value of Filtered Water		09-Nov-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	20-Oct-2022
Total Sulphate	14-Oct-2022	14-Oct-2022
VOC MS (S)	24-Oct-2022	21-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-23
Client Ref: F212561

Report Number: 667796
Location: Keadby 3

Superseded Report: 666564

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-24
Your Reference: F212561
Location: Keadby 3
Report No: 665749
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665540 in its entirety.

We received 4 samples on Wednesday October 12, 2022 and 1 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008193	DS103	ES2	0.10 - 0.10	29/09/2022
27008201	DS103	ES5	0.40 - 0.40	29/09/2022
27008208	DS103	ES7	0.70 - 0.70	29/09/2022
27008215	DS103	ES8	1.20 - 1.20	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Results Legend					
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		27008201		
	Customer Sample Reference		DS103		
	AGS Reference		ESS		
	Depth (m)		0.40 - 0.40		
	Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type		S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27008201	DS103	ESS	0.40 - 0.40	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
Sample description	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X			
VOC MS (S)	All	NDPs: 0 Tests: 1			X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008201	DS103	0.40 - 0.40	Dark Brown	Sandy Silt Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		DS103 ADS1220929020 0.40 - 0.40 Soil/Solid (S) 29/09/2022 15:18 12/10/2022 221013-24 27008201 ES5			
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	20				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	20.3	#			
pH	1 pH Units	TM133	8.28	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	@ M			
Cyanide, Free	<1 mg/kg	TM153	<1	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	28.2				
Arsenic	<0.6 mg/kg	TM181	140	M			
Boron	<0.7 mg/kg	TM181	19	#			
Cadmium	<0.02 mg/kg	TM181	0.209	M			
Chromium	<0.9 mg/kg	TM181	28.2	M			
Copper	<1.4 mg/kg	TM181	89.2	M			
Iron	<1000 mg/kg	TM181	43100	#			
Lead	<0.7 mg/kg	TM181	45.7	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	51.9	M			
Selenium	<1 mg/kg	TM181	1.57	#			
Zinc	<1.9 mg/kg	TM181	55.9	M			
Sulphate, Total	<48 mg/kg	TM221	440	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0147				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.1				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.163	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	7.64				
EPH (C5-C40)	<35 mg/kg	TM415	63				
EPH Surrogate % recovery**	%	TM415	106				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Results Legend		Customer Sample Ref.					
#	ISO17025 accredited.	DS103					
M	mCERTS accredited.	ADS1220929020					
aq	Aqueous / settled sample.	0.40 - 0.40					
dis.fil	Dissolved / filtered sample.						
tot.unfil	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Sample Type					
(F)	Trigger breach confirmed	Date Sampled					
1-4*#@	Sample deviation (see appendix)	Sample Time					
		Date Received					
		SDG Ref					
		Lab Sample No.(s)					
		AGS Reference					
Component	LOD/Units	Method					
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	63 @ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

PAH by GCMS

Results Legend		Customer Sample Ref.	DS103					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220929020					
M	mCERTS accredited.		0.40 - 0.40					
aq	Aqueous / settled sample.		Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.		29/09/2022					
tot.unfilt	Total / unfiltered sample.		15:18					
	* Subcontracted - refer to subcontractor report for accreditation status.		12/10/2022					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221013-24					
	(F) Trigger breach confirmed		27008201					
	1-4*\$@ Sample deviation (see appendix)		ES5					
Component	LOD/Units		Method					
Naphthalene-d8 % recovery**	%	TM218	70.7					
Acenaphthene-d10 % recovery**	%	TM218	78.4					
Phenanthrene-d10 % recovery**	%	TM218	51.4					
Chrysene-d12 % recovery**	%	TM218	16.6					
Perylene-d12 % recovery**	%	TM218	6.36					
Naphthalene	<9 µg/kg	TM218	15.7	@ M				
Acenaphthylene	<12 µg/kg	TM218	<12	@ M				
Acenaphthene	<8 µg/kg	TM218	<8	@ M				
Fluorene	<10 µg/kg	TM218	<10	@ M				
Phenanthrene	<15 µg/kg	TM218	20.2	@ M				
Anthracene	<16 µg/kg	TM218	<16	@ M				
Fluoranthene	<17 µg/kg	TM218	<17	@ M				
Pyrene	<15 µg/kg	TM218	<15	@ M				
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M				
Chrysene	<10 µg/kg	TM218	<10	@ M				
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M				
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M				
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M				
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M				
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M				
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M				
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

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VOC MS (S)

Table with 6 columns: Component, LOD/Units, Method, Results, and two empty columns. Rows include Dibromofluoromethane, Toluene-d8, 4-Bromofluorobenzene, Methyl Tertiary Butyl Ether, Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, and Sum of BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
24/10/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	DS103E55
Depth (m)	0.40 - 0.40
Sample Type	SOLID
Date Sampled	29/09/2022 00:00:00
Date Received	12/10/2022 05:00:00
SDG	221013-24
Original Sample	27008201
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-24
Client Ref.: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Test Completion Dates

Lab Sample No(s)	27008201
Customer Sample Ref.	DS103
AGS Ref.	ES5
Depth	0.40 - 0.40
Type	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022
Chromium III	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022
Elemental Sulphur	20-Oct-2022
EPH	24-Oct-2022
EPH by GCxGC-FID	17-Oct-2022
GRO by GC-FID (S)	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022
PAH by GCMS	19-Oct-2022
pH	21-Oct-2022
Phenols by HPLC (S)	17-Oct-2022
Sample description	13-Oct-2022
Total Organic Carbon	20-Oct-2022
Total Sulphate	14-Oct-2022
VOC MS (S)	21-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-24
Client Ref: F212561

Report Number: 665749
Location: Keadby 3

Superseded Report: 665540

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
 Manor Road (off Manor Lane)
 Hawarden
 Deeside
 CH5 3US

[Redacted]
 [Redacted]@alsglobal.com
 Website: www.alsenvironmental.co.uk

Fugro GeoServices Ltd - Keadby
 Fugro House
 Hithercroft Road
 Wallingford
 Oxfordshire
 OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 26 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-25
Your Reference: F212561
Location: Keadby 3
Report No: 666127
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665745 in its entirety.

We received 1 sample on Wednesday October 12, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday October 26, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

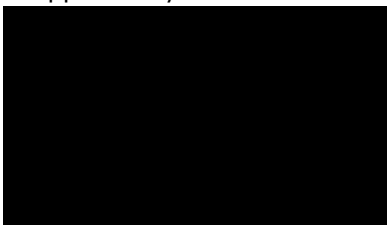
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008227	DS108	ES11	3.50 - 4.00	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27008227	DS108	ES11	3.50 - 4.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
	Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
	Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
	Chromium III	All	NDPs: 0 Tests: 1	X		
	Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27008227	DS108	ES11	3.50 - 4.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S	
					S	S	
					S	S	
	Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			
	Sample description	All	NDPs: 0 Tests: 1	X			
	Total Organic Carbon	All	NDPs: 0 Tests: 1	X			
Total Sulphate	All	NDPs: 0 Tests: 1	X				
VOC MS (S)	All	NDPs: 0 Tests: 1			X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
------------------	----------	-------------	-----------------	---------------	-------------	---------------	------------	--------------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008227	DS108	3.50 - 4.00	Dark Brown	Sandy Silt Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Results Legend		Customer Sample Ref.							
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS108 F-3WLPVB-AH46 3.50 - 4.00 Soil/Solid (S) 29/09/2022 15:00 12/10/2022 221013-25 27008227 ES11						
Component	LOD/Units	Method							
Moisture Content Ratio (% of as received sample)	%	PM024	23						
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M					
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M					
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M					
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M					
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M					
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M					
Soil Organic Matter (SOM)	<0.35 %	TM132	16.6	#					
pH	1 pH Units	TM133	8.36	M					
Sulphur, Elemental	<10 mg/kg	TM136	<10	M					
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M					
Cyanide, Total	<1 mg/kg	TM153	<1	@ M					
Cyanide, Free	<1 mg/kg	TM153	<1	@ M					
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M					
Chromium, Trivalent	<0.9 mg/kg	TM181	44.3						
Arsenic	<0.6 mg/kg	TM181	114	M					
Boron	<0.7 mg/kg	TM181	34.4	#					
Cadmium	<0.02 mg/kg	TM181	0.272	M					
Chromium	<0.9 mg/kg	TM181	44.3	M					
Copper	<1.4 mg/kg	TM181	99.1	M					
Iron	<1000 mg/kg	TM181	32700	#					
Lead	<0.7 mg/kg	TM181	61	M					
Mercury	<0.1 mg/kg	TM181	<0.1	M					
Nickel	<0.2 mg/kg	TM181	57	M					
Selenium	<1 mg/kg	TM181	3.06	#					
Zinc	<1.9 mg/kg	TM181	63.9	M					
Sulphate, Total	<48 mg/kg	TM221	280	M					
Total Sulphur (ASB)	<0.0016 %	TM221	0.00934						
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1						
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0417	M					
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	20.4						
EPH (C5-C40)	<35 mg/kg	TM415	<35						
EPH Surrogate % recovery**	%	TM415	104						



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

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Results Legend		Customer Sample Ref.	DS108				
#	ISO17025 accredited.		F-3WLPVB-AH46				
m	mCERTS accredited.		3.50 - 4.00				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:00				
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-25				
(F)	Trigger breach confirmed	SDG Ref	27008227				
1-4*	@ Sample deviation (see appendix)	Lab Sample No.(s)	ES11				
	AGS Reference						
Component	LOD/Units	Method					
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	@ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25

Report Number: 666127

Superseded Report: 665745

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS108				
#	ISO17025 accredited.		F-3WLPVB-AH46				
M	mCERTS accredited.		3.50 - 4.00				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:00				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-25				
	(F) Trigger breach confirmed	SDG Ref	27008227				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES11				
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20				
			4 @				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

PAH by GCMS

Results Legend		Customer Sample Ref.				
# ISO17025 accredited.		DS108				
M mCERTS accredited.		F-3WLPVB-AH46				
aq Aqueous / settled sample.		3.50 - 4.00				
diss.filt Dissolved / filtered sample.		Soil/Solid (S)				
tot.unfilt Total / unfiltered sample.		29/09/2022				
* Subcontracted - refer to subcontractor report for accreditation status.		15:00				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12/10/2022				
(F) Trigger breach confirmed		221013-25				
1-4*@\$@ Sample deviation (see appendix)		27008227				
		ES11				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Naphthalene-d8 % recovery**	%	TM218	72.4			
Acenaphthene-d10 % recovery**	%	TM218	81.8			
Phenanthrene-d10 % recovery**	%	TM218	52.3			
Chrysene-d12 % recovery**	%	TM218	12.4			
Perylene-d12 % recovery**	%	TM218	4			
Naphthalene	<9 µg/kg	TM218	17.4	@ M		
Acenaphthylene	<12 µg/kg	TM218	<12	@ M		
Acenaphthene	<8 µg/kg	TM218	<8	@ M		
Fluorene	<10 µg/kg	TM218	<10	@ M		
Phenanthrene	<15 µg/kg	TM218	<15	@ M		
Anthracene	<16 µg/kg	TM218	<16	@ M		
Fluoranthene	<17 µg/kg	TM218	<17	@ M		
Pyrene	<15 µg/kg	TM218	<15	@ M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M		
Chrysene	<10 µg/kg	TM218	<10	@ M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

VOC MS (S)

Results Legend		Customer Sample Ref.	DS108				
#	ISO17025 accredited.		F-3WLPVB-AH46				
M	mCERTS accredited.		3.50 - 4.00				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:00				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-25				
(F)	Trigger breach confirmed	SDG Ref	27008227				
1-4*\$	@ Sample deviation (see appendix)	Lab Sample No.(s)	ES11				
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	131	@			
Toluene-d8**	%	TM116	99.4	@			
4-Bromofluorobenzene**	%	TM116	72.7	@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M			
Benzene	<9 µg/kg	TM116	<180	@ M			
Toluene	<7 µg/kg	TM116	<140	@ M			
Ethylbenzene	<4 µg/kg	TM116	<80	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	@ #			
o-Xylene	<10 µg/kg	TM116	<200	@ M			
Sum of BTEX	<40 µg/kg	TM116	<800	@			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5□ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref.	DS108ES11	24/10/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	3.50 - 4.00										
Sample Type	SOLID										
Date Sampled	29/09/2022 00:00:00										
Date Received	12/10/2022 05:00:00										
SDG	221013-25										
Original Sample	27008227										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)'	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-25
Client Ref.: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Test Completion Dates

Lab Sample No(s)	27008227
Customer Sample Ref.	DS108
AGS Ref.	ES11
Depth	3.50 - 4.00
Type	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Asbestos ID in Solid Samples	26-Oct-2022
Chromium III	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022
Easily Liberated Sulphide	20-Oct-2022
Elemental Sulphur	20-Oct-2022
EPH	24-Oct-2022
EPH by GCxGC-FID	24-Oct-2022
GRO by GC-FID (S)	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022
PAH by GCMS	20-Oct-2022
pH	21-Oct-2022
Phenols by HPLC (S)	17-Oct-2022
Sample description	13-Oct-2022
Total Organic Carbon	20-Oct-2022
Total Sulphate	14-Oct-2022
VOC MS (S)	24-Oct-2022

ALS Environmental, Land	Issue No. 4
	Date: 03/03/2020
QF.7.5.1 Data Amendments Form	Issued and Authorised by Quality Manager

SDG	Sample Event	Sample ID	Date Amended	Amendment Reason	Analysis/Component	Authorised (Lab Manager)	Previous Value	New Value	Units	Supersedes Report
221013-25	27008227	DS108 (3.50-4.00)	26/10/2022	Transcription/Registration Issue	Asbestos identification (Chrysotile)	M. Rogulis	No Value	Not detected	N/A	665745



CERTIFICATE OF ANALYSIS

SDG: 221013-25
Client Ref: F212561

Report Number: 666127
Location: Keadby 3

Superseded Report: 665745

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-28
Your Reference: F212561
Location: Keadby 3
Report No: 668068
Order Number: 386/121917/CP

This report has been revised and directly supersedes 666805 in its entirety.

We received 6 samples on Friday October 07, 2022 and 3 of these samples were scheduled for analysis which was completed on Thursday November 10, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

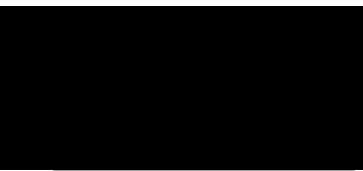
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008312	DS108	ES10	1.50 - 2.00	29/09/2022
27008324	DS108	ES9	2.50 - 3.00	29/09/2022
27008335	DS110	ES10	2.50 - 3.00	29/09/2022
27008347	DS110	ES12	4.50 - 5.00	29/09/2022
27008371	DS111	ES9	1.50 - 2.00	29/09/2022
27008359	DS111	ES11	3.50 - 4.00	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27008312	DS108	ES10	1.50 - 2.00	1kg TUB with Handle (ALE260)	S
		27008335	DS110	ES10	2.50 - 3.00	250g Amber Jar (ALE210)	S
		27008371	DS111	ES9	1.50 - 2.00	60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
Ammonium Low	All	NDPs: 0 Tests: 2					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3					
Anions by Kone (soil)	All	NDPs: 0 Tests: 3					
Anions by Kone (w)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3					
CEN Readings	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2					
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3					
Elemental Sulphur	All	NDPs: 0 Tests: 3					
EPH	All	NDPs: 0 Tests: 3					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Results Legend			Lab Sample No(s)			Customer Sample Reference			AGS Reference			Depth (m)			Container			Sample Type		
			27008312	27008335	27008371	DS108	DS110	DS111	ES10	ES10	ES9	1.50 - 2.00	2.50 - 3.00	1.50 - 2.00	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S	S	S
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>																				
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3		X			X					X								
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2	X									X								
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2	X									X								
Mercury Dissolved	All	NDPs: 0 Tests: 2	X									X								
Metals in solid samples by OES	All	NDPs: 0 Tests: 3		X			X												X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2	X									X								
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3		X			X												X	
PAH by GCMS	All	NDPs: 0 Tests: 3		X			X												X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2	X									X								
pH	All	NDPs: 0 Tests: 3		X			X												X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 2	X									X								
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3		X			X												X	
Sample description	All	NDPs: 0 Tests: 3		X			X												X	
Total Organic Carbon	All	NDPs: 0 Tests: 3		X			X												X	
Total Sulphate	All	NDPs: 0 Tests: 3		X			X												X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Results Legend	Lab Sample No(s)	27008312	27008335	27008371	
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Customer Sample Reference	DS108	DS110	DS111	
	AGS Reference	ES10	ES10	ES9	
	Depth (m)	1.50 - 2.00	2.50 - 3.00	1.50 - 2.00	
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)	60g VOC (ALE215)
	Sample Type	S	S	S	S
	VOC MS (S)	All	NDPs: 0 Tests: 3	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008312	DS108	1.50 - 2.00	Light Brown	Sandy Silt Loam	None	None
27008335	DS110	2.50 - 3.00	Grey	Loamy Sand	Stones	None
27008371	DS111	1.50 - 2.00	Dark Brown	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Results Legend		Customer Sample Ref.	DS108	DS110	DS111		
#	ISO17025 accredited.		DS108	DS110	DS111		
M	mCERTS accredited.		F-LHLPVB-DD4U	F-P05OVB-PNW6	F-S9POVB-TPM1		
aq	Aqueous / settled sample.	Depth (m)	1.50 - 2.00	2.50 - 3.00	1.50 - 2.00		
diss.filt	Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
tot.unfilt	Total / unfiltered sample.	Date Sampled	29/09/2022	29/09/2022	29/09/2022		
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Received	16:00	10:00	14:50		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	221013-28	221013-28	221013-28		
	(F) Trigger breach confirmed	Lab Sample No.(s)	27008312	27008335	27008371		
	1-4*§ Sample deviation (see appendix)	AGS Reference	ES10	ES10	ES9		
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	18	21	21		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M	<0.015 @ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M	<0.035 @ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	15.6 #	14 #	14.2 #		
pH	1 pH Units	TM133	8.29 M	9.01 M	8.62 M		
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M		
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M		
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	34.4	25.2	30.7		
Arsenic	<0.6 mg/kg	TM181	108 M	76.3 M	86.5 M		
Boron	<0.7 mg/kg	TM181	29.7 #	36 #	31 #		
Cadmium	<0.02 mg/kg	TM181	0.251 M	0.179 M	0.25 M		
Chromium	<0.9 mg/kg	TM181	34.4 M	25.2 M	30.7 M		
Copper	<1.4 mg/kg	TM181	90.1 M	74.9 M	80 M		
Iron	<1000 mg/kg	TM181	31800 #	38000 #	37000 #		
Lead	<0.7 mg/kg	TM181	52.9 M	36.9 M	46.8 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	53.6 M	42.5 M	45.8 M		
Selenium	<1 mg/kg	TM181	2.16 #	2.84 #	2.47 #		
Zinc	<1.9 mg/kg	TM181	57.8 M	50.6 M	65.7 M		
Sulphate, Total	<48 mg/kg	TM221	251 M	321 M	310 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.00837	0.0107	0.0103		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1	0.18	0.14		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0304 M	0.0269 M	0.0201 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	11.2	7.52	6.73		
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	<35		
EPH Surrogate % recovery**	%	TM415	102	98.4	98.5		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

PAH by GCMS

Results Legend		Customer Sample Ref.	DS108	DS110	DS111			
#	ISO17025 accredited.		F-LHLPVB-DD4U	F-P05OVVB-PNW6	F-S9POVB-TPM1			
M	mCERTS accredited.		1.50 - 2.00	2.50 - 3.00	1.50 - 2.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022	29/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:00	10:00	14:50			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-28	221013-28	221013-28			
	(F) Trigger breach confirmed	SDG Ref	27008312	27008335	27008371			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES10	ES10	ES9			
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	65	71.2	75.2			
Acenaphthene-d10 % recovery**	%	TM218	71.2	75.1	79.3			
Phenanthrene-d10 % recovery**	%	TM218	40.8	42.9	57.6			
Chrysene-d12 % recovery**	%	TM218	12	10.1	17.2			
Perylene-d12 % recovery**	%	TM218	4.02	3.39	5.78			
Naphthalene	<9 µg/kg	TM218	19.4	<9	<9			
			@ M	@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12			
			@ M	@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8			
			@ M	@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10	<10			
			@ M	@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15	<15			
			@ M	@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16	<16			
			@ M	@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17	<17			
			@ M	@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15	<15			
			@ M	@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14			
			@ M	@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10	<10			
			@ M	@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15	<15			
			@ M	@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14			
			@ M	@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15			
			@ M	@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18			
			@ M	@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23			
			@ M	@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24			
			@ M	@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

VOC MS (S)

Table with columns for Component, LOD/Units, Method, and results for DS108, DS110, and DS111. Rows include various VOCs like Dibromofluoromethane, Toluene, and BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS108ES10 1.50 - 2.00 SOLID 29/09/2022 00:00:00 07/10/2022 17:00:00 221013-28 27008312 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS110ES10 2.50 - 3.00 SOLID 29/09/2022 00:00:00 07/10/2022 17:00:00 221013-28 27008335 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS111ES9 1.50 - 2.00 SOLID 29/09/2022 00:00:00 07/10/2022 17:00:00 221013-28 27008371 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23.4
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81
Particle Size <4mm	>95%		

Case	
SDG	221013-28
Lab Sample Number(s)	27008312
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS108 ES10
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.0207	<0.003	0.0414	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	26.5	<2	53	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0221	<0.01	0.0442	<0.02
Arsenic	0.112	<0.000992	0.224	<0.00198
Nitrate as NO3	3.83	<0.3	7.66	<0.6
Total Ammonium Low as NH4	0.284	<0.01	0.568	<0.02
Boron	0.186	<0.01	0.372	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0179	<0.001	0.0358	<0.002
Copper	<0.0003	<0.0003	<0.0006	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	0.000458	<0.0004	0.000916	<0.0008
Selenium	0.0238	<0.001	0.0476	<0.002
Zinc	<0.001	<0.001	<0.002	<0.002
Calcium (Dis.Filt) mg/l	36.4	<0.2	72.8	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	106	<0.65	212	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.00
Conductivity (µS/cm)	200
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

10/11/2022 16:50:02

16:49:49 10/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.216	Natural Moisture Content (%)	23.4
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	81
Particle Size <4mm	>95%		

Case	
SDG	221013-28
Lab Sample Number(s)	27008312
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS108 ES10
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.00
Conductivity (µS/cm)	200
Volume Leachant (Litres)	0.309
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

10/11/2022 16:50:02

16:49:49 10/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.222	Natural Moisture Content (%)	26.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	79
Particle Size <4mm	>95%		

Case	
SDG	221013-28
Lab Sample Number(s)	27008371
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS111 ES9
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.0398	<0.003	0.0796	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	20.2	<2	40.4	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	3.93	<3	7.86	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0294	<0.01	0.0588	<0.02
Arsenic	0.0985	<0.0005	0.197	<0.001
Nitrate as NO3	2.5	<0.3	5	<0.6
Total Ammonium Low as NH4	0.378	<0.01	0.756	<0.02
Boron	0.358	<0.01	0.716	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.034	<0.001	0.068	<0.002
Copper	<0.0003	<0.0003	<0.0006	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	0.0169	<0.001	0.0338	<0.002
Zinc	0.012	<0.001	0.024	<0.002
Calcium (Dis.Filt) mg/l	32.8	<0.2	65.6	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	125	<0.65	250	<1.3

PAH Spec MS - Aqueous (W)

Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.41
Conductivity (µS/cm)	217
Volume Leachant (Litres)	0.303
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

10/11/2022 16:50:02

16:49:49 10/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.222	Natural Moisture Content (%)	26.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	79
Particle Size <4mm	>95%		

Case	
SDG	221013-28
Lab Sample Number(s)	27008371
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS111 ES9
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.41
Conductivity (µS/cm)	217
Volume Leachant (Litres)	0.303
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

10/11/2022 16:50:02

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SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-28
Client Ref.: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Test Completion Dates

Lab Sample No(s)	27008312	27008335	27008371
Customer Sample Ref.	DS108	DS110	DS111
AGS Ref.	ES10	ES10	ES9
Depth	1.50 - 2.00	2.50 - 3.00	1.50 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low	20-Oct-2022		20-Oct-2022
Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022	20-Oct-2022
Anions by Kone (w)	20-Oct-2022		20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022	24-Oct-2022	24-Oct-2022
CEN 2:1 Leachate (1 Stage)	15-Oct-2022		15-Oct-2022
CEN Readings	19-Oct-2022		19-Oct-2022
Chromium III	25-Oct-2022	20-Oct-2022	25-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022	18-Oct-2022
Dissolved Metals by ICP-MS	10-Nov-2022		09-Nov-2022
Dissolved Organic/Inorganic Carbon	19-Oct-2022		19-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	19-Oct-2022	19-Oct-2022
Elemental Sulphur	20-Oct-2022	20-Oct-2022	24-Oct-2022
EPH	21-Oct-2022	21-Oct-2022	24-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022	19-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	21-Oct-2022	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022	19-Oct-2022
Low Level Cyanide (W)	25-Oct-2022		25-Oct-2022
Low Level Hexavalent Chromium (w)	20-Oct-2022		20-Oct-2022
Mercury Dissolved	20-Oct-2022		20-Oct-2022
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022	19-Oct-2022
Moisture at 105C	14-Oct-2022		14-Oct-2022
Nitrite by Kone (w)	19-Oct-2022		19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022	17-Oct-2022	17-Oct-2022
PAH by GCMS	19-Oct-2022	21-Oct-2022	21-Oct-2022
PAH Spec MS - Aqueous (W)	20-Oct-2022		20-Oct-2022
pH	21-Oct-2022	21-Oct-2022	21-Oct-2022
pH Value of Filtered Water	10-Nov-2022		09-Nov-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	21-Oct-2022	20-Oct-2022
Total Sulphate	18-Oct-2022	18-Oct-2022	18-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-28
Client Ref: F212561

Report Number: 668068
Location: Keadby 3

Superseded Report: 666805

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-29
Your Reference: F212561
Location: Keadby 3
Report No: 665727
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665305 in its entirety.

We received 4 samples on Friday October 07, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

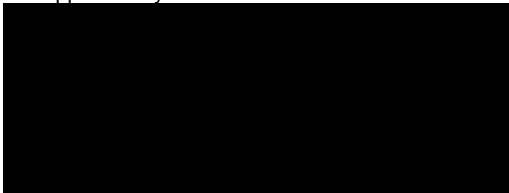
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008407	BH103	ES48	18.80 - 18.80	30/09/2022
27008416	BH103	ES51	20.00 - 20.00	30/09/2022
27008390	BH103	ES23	6.80 - 6.80	29/09/2022
27008399	BH103	ES25	7.80 - 7.80	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27008407	27008399
Customer Sample Reference	BH103	BH103
AGS Reference	ES48	ES25
Depth (m)	18.80 - 18.80	7.80 - 7.80
Container	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type	S	S

Parameter	Method	NDPs: 0 Tests: 2	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)
Ammonium Soil by Titration	All		X			X
Anions by Kone (soil)	All		X			X
Asbestos ID in Solid Samples	All				X	
Chromium III	All		X			X
Cyanide Comp/Free/Total/Thiocyanate	All		X			X
Easily Liberated Sulphide	All		X			X
Elemental Sulphur	All		X			X
EPH	All		X			X
EPH by GCxGC-FID	All		X			X
GRO by GC-FID (S)	All			X		X
Hexavalent Chromium (s)	All		X			X
Metals in solid samples by OES	All		X			X
NO3, NO2 and TON by KONE (s)	All		X			X
PAH by GCMS	All		X			X
pH	All		X			X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Results Legend								
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		27008407		27008399			
	Customer Sample Reference		BH103		BH103			
	AGS Reference		ES48		ES25			
	Depth (m)		18.80 - 18.80		7.80 - 7.80			
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type		S	S	S	S	S	
	Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X		
Sample description	All	NDPs: 0 Tests: 2	X		X			
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X			
Total Sulphate	All	NDPs: 0 Tests: 2	X		X			
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X		



CERTIFICATE OF ANALYSIS

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SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008399	BH103	7.80 - 7.80	Dark Brown	Sandy Silt Loam	None	None
27008407	BH103	18.80 - 18.80	Dark Brown	Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Results Legend		Customer Sample Ref.		BH103	BH103			
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-Q9ILVB-Q5M0	F-DKCLVB-4U90				
M mCERTS accredited.			18.80 - 18.80	7.80 - 7.80				
aq Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)				
diss.filt Dissolved / filtered sample.			30/09/2022	29/09/2022				
tot.unfilt Total / unfiltered sample.			14:50	16:00				
* Subcontracted - refer to subcontractor report for accreditation status.			07/10/2022	07/10/2022				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221013-29	221013-29				
(F) Trigger breach confirmed			27008407	27008399				
1-4*§ Sample deviation (see appendix)			ES48	ES25				
Component	LOD/Units		Method					
Moisture Content Ratio (% of as received sample)	%	PM024	23	22				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M				
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M				
Soil Organic Matter (SOM)	<0.35 %	TM132	19.7 #	21.4 #				
pH	1 pH Units	TM133	8.53 M	8.62 M				
Sulphur, Elemental	<10 mg/kg	TM136	15.8 M	<10 M				
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M				
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M				
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M				
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M				
Chromium, Trivalent	<0.9 mg/kg	TM181	27.2	30.2				
Arsenic	<0.6 mg/kg	TM181	118 M	120 M				
Boron	<0.7 mg/kg	TM181	72.4 #	29 #				
Cadmium	<0.02 mg/kg	TM181	0.267 M	0.225 M				
Chromium	<0.9 mg/kg	TM181	27.2 M	30.2 M				
Copper	<1.4 mg/kg	TM181	90 M	82.9 M				
Iron	<1000 mg/kg	TM181	33700 #	32300 #				
Lead	<0.7 mg/kg	TM181	42.3 M	44.1 M				
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M				
Nickel	<0.2 mg/kg	TM181	50.6 M	50.7 M				
Selenium	<1 mg/kg	TM181	2.33 #	3.35 #				
Zinc	<1.9 mg/kg	TM181	48.1 M	62.5 M				
Sulphate, Total	<48 mg/kg	TM221	1890 M	339 M				
Total Sulphur (ASB)	<0.0016 %	TM221	0.0629	0.0113				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.15	0.12				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.767 M	0.0856 M				
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1	7.41				
EPH (C5-C40)	<35 mg/kg	TM415	262	62.4				
EPH Surrogate % recovery**	%	TM415	101	92.1				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Results Legend		Customer Sample Ref.	BH103		BH103					
			F-Q9ILVB-Q5M0	18.80 - 18.80	F-DKCLVB-4U90	7.80 - 7.80				
#	ISO17025 accredited.	Depth (m)	30/09/2022	Soil/Solid (S)	29/09/2022	Soil/Solid (S)				
M	mCERTS accredited.	Sample Type	14:50		16:00					
sq	Aqueous / settled sample.	Date Sampled	07/10/2022		07/10/2022					
dis.fil	Dissolved / filtered sample.	Sample Time	221013-29		221013-29					
tot.unfilt	Total / unfiltered sample.	Date Received	27008407		27008399					
	* Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref	ES48		ES25					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Lab Sample No.(s)								
	(F) Trigger breach confirmed	AGS Reference								
	1-4*@@ Sample deviation (see appendix)									
Component	LOD/Units	Method								
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	262	M	62.4	@ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

PAH by GCMS

Results Legend		Customer Sample Ref.	BH103	BH103			
#	ISO17025 accredited.		F-Q9ILVB-Q5M0	F-DKCLVB-4U90			
M	mCERTS accredited.		18.80 - 18.80	7.80 - 7.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	30/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:50	16:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-29	221013-29			
	(F) Trigger breach confirmed	SDG Ref	27008407	27008399			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES48	ES25			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	34.5	51.1			
Acenaphthene-d10 % recovery**	%	TM218	38.1	52.4			
Phenanthrene-d10 % recovery**	%	TM218	7.09	17.5			
Chrysene-d12 % recovery**	%	TM218	0.2	3.18			
Perylene-d12 % recovery**	%	TM218	0	1.21			
Naphthalene	<9 µg/kg	TM218	13	15.6			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

VOC MS (S)

Results Legend		Customer Sample Ref.		BH103	BH103			
#	ISO17025 accredited.			F-Q9ILVB-Q5M0	F-DKCLVB-4U90			
M	mCERTS accredited.			18.80 - 18.80	7.80 - 7.80			
aq	Aqueous / settled sample.	Depth (m)		Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type		30/09/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled		14:50	16:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time		07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received		221013-29	221013-29			
	(F) Trigger breach confirmed	SDG Ref		27008407	27008399			
	1-4*\$@ Sample deviation (see appendix)	Lab Sample No.(s)		ES48	ES25			
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	118	116	@	@		
Toluene-d8**	%	TM116	93.5	102	@	@		
4-Bromofluorobenzene**	%	TM116	85.9	82.4	@	@		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<200	@ M	@ M		
Benzene	<9 µg/kg	TM116	<180	<180	@ M	@ M		
Toluene	<7 µg/kg	TM116	<140	<140	@ M	@ M		
Ethylbenzene	<4 µg/kg	TM116	<80	<80	@ M	@ M		
p/m-Xylene	<10 µg/kg	TM116	<200	<200	@ #	@ #		
o-Xylene	<10 µg/kg	TM116	<200	<200	@ M	@ M		
Sum of BTEX	<40 µg/kg	TM116	<800	<800	@	@		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	BH103ES25
Depth (m)	7.80 - 7.80
Sample Type	SOLID
Date Sampled	29/09/2022 00:00:00
Date Received	07/10/2022 17:00:00
SDG	221013-29
Original Sample	27008399
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-29
Client Ref.: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Test Completion Dates

Lab Sample No(s)	27008399	27008407
Customer Sample Ref.	BH103	BH103
AGS Ref.	ES25	ES48
Depth	7.80 - 7.80	18.80 - 18.80
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022	
Chromium III	20-Oct-2022	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022	19-Oct-2022
Elemental Sulphur	20-Oct-2022	24-Oct-2022
EPH	21-Oct-2022	24-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022	20-Oct-2022
PAH by GCMS	19-Oct-2022	20-Oct-2022
pH	21-Oct-2022	18-Oct-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	21-Oct-2022
Total Sulphate	18-Oct-2022	18-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-29
Client Ref: F212561

Report Number: 665727
Location: Keadby 3

Superseded Report: 665305

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 16 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-30
Your Reference: F212561
Location: Keadby 3
Report No: 668621
Order Number: 386/121917/CP

This report has been revised and directly supersedes 668549 in its entirety.

We received 7 samples on Friday October 07, 2022 and 2 of these samples were scheduled for analysis which was completed on Wednesday November 16, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

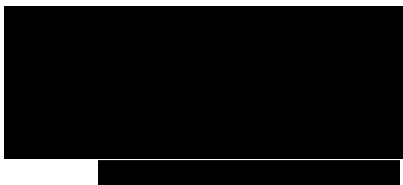
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008433	DS107	ES12	4.50 - 5.00	04/10/2022
27008446	DS110	ES9	1.50 - 2.00	29/09/2022
27008459	DS111	ES2	0.10 - 0.10	29/09/2022
27008467	DS111	ES5	0.40 - 0.40	29/09/2022
27008474	DS111	ES7	0.70 - 0.70	29/09/2022
27008484	DS111	ES8	1.20 - 1.20	29/09/2022
27008491	DS111	ES9	1.50 - 2.00	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27008491	DS111	ES12	1.50 - 2.00	60g VOC (ALE215)	S
		27008433	DS107		4.50 - 5.00	250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
						60g VOC (ALE215)	S
						1kg TUB with Handle (ALE260)	S
					250g Amber Jar (ALE210)	S	
					1kg TUB with Handle (ALE260)	S	
Ammonium Low	All	NDPs: 0 Tests: 1				X	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X			X	
Anions by Kone (w)	All	NDPs: 0 Tests: 1			X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X		X		
CEN Readings	All	NDPs: 0 Tests: 1			X		
Chromium III	All	NDPs: 0 Tests: 3	X		X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1			X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1			X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X			X	
Elemental Sulphur	All	NDPs: 0 Tests: 2	X			X	
EPH	All	NDPs: 0 Tests: 2	X			X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2			X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27008433	27008491
Customer Sample Reference	DS107	DS111
AGS Reference	ES12	ES9
Depth (m)	4.50 - 5.00	1.50 - 2.00
Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)
Sample Type	S	S

Analyte	All	NDPs: 0 Tests: 2	Sample Types					
			S	S	S	S	S	S
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X				X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1				X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1				X		
Mercury Dissolved	All	NDPs: 0 Tests: 1				X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X				X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1				X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X				X	
PAH by GCMS	All	NDPs: 0 Tests: 2	X				X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1				X		
pH	All	NDPs: 0 Tests: 2	X				X	
pH Value of Filtered Water	All	NDPs: 0 Tests: 1				X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X				X	
Sample description	All	NDPs: 0 Tests: 2	X				X	
Total Organic Carbon	All	NDPs: 0 Tests: 2	X				X	
Total Sulphate	All	NDPs: 0 Tests: 2	X				X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
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- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	27008433		27008491		
	Customer Sample Reference	DS107		DS111		
	AGS Reference	ES12		ES9		
	Depth (m)	4.50 - 5.00		1.50 - 2.00		
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008433	DS107	4.50 - 5.00	Grey	Loamy Sand	None	None
27008491	DS111	1.50 - 2.00	Light Brown	Silty Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Results Legend		Customer Sample Ref.	DS107	DS111			
#	ISO17025 accredited.		F-268LVB-KNFF	F-S9POVB-TPM1			
M	mCERTS accredited.		4.50 - 5.00	1.50 - 2.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	04/10/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	08:13	12:30			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-30	221013-30			
(F)	Trigger breach confirmed	SDG Ref	27008433	27008491			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES12	ES9			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	19	20			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	@ M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	@ M	
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	M	@ M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	M	@ M	
Soil Organic Matter (SOM)	<0.35 %	TM132	15.3	14.5	#	#	
pH	1 pH Units	TM133	9.05	8.71	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	@ M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	@ M	
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181	28.6	26.2			
Arsenic	<0.6 mg/kg	TM181	89.5	90.8	M	M	
Boron	<0.7 mg/kg	TM181	36	33.3	#	#	
Cadmium	<0.02 mg/kg	TM181	0.108	0.13	M	M	
Chromium	<0.9 mg/kg	TM181	28.6	26.2	M	M	
Copper	<1.4 mg/kg	TM181	76.6	80.1	M	M	
Iron	<1000 mg/kg	TM181	28900	37500	#	#	
Lead	<0.7 mg/kg	TM181	39.4	42.6	M	M	
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	M	M	
Nickel	<0.2 mg/kg	TM181	45.1	46.5	M	M	
Selenium	<1 mg/kg	TM181	2.37	2.83	#	#	
Zinc	<1.9 mg/kg	TM181	49.3	63.6	M	M	
Sulphate, Total	<48 mg/kg	TM221	328	549	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	0.0109	0.0183			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.64	0.17			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.024	0.11	M	M	
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	7.04	3.96			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35			
EPH Surrogate % recovery**	%	TM415	109	104			



CERTIFICATE OF ANALYSIS

SDG: 221013-30
 Client Ref.: F212561

Report Number: 668621
 Location: Keadby 3

Superseded Report: 668549

Results Legend		Customer Sample Ref.	DS107	DS111				
#	ISO17025 accredited.	F-268LVB-KNFF	F-268LVB-KNFF	F-S9POVB-TPM1				
M	mCERTS accredited.	Depth (m)	4.50 - 5.00	1.50 - 2.00				
sq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)				
dis.filt	Dissolved / filtered sample.	Date Sampled	04/10/2022	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Sample Time	08:13	12:30				
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Received	07/10/2022	07/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	SDG Ref	221013-30	221013-30				
(F)	Trigger breach confirmed.	Lab Sample No.(s)	27008433	27008491				
1-4*#@	Sample deviation (see appendix)	AGS Reference	ES12	ES9				
Component	LOD/Units	Method						
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 M	<35 @ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

PAH by GCMS

Results Legend		Customer Sample Ref.	DS107	DS111			
#	ISO17025 accredited.		F-268LVB-KNFF	F-S9POVB-TPM1			
M	mCERTS accredited.		4.50 - 5.00	1.50 - 2.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	04/10/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	08:13	12:30			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-30	221013-30			
	(F) Trigger breach confirmed	SDG Ref	27008433	27008491			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES12	ES9			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	56.6	71.7			
Acenaphthene-d10 % recovery**	%	TM218	58.6	76.6			
Phenanthrene-d10 % recovery**	%	TM218	16.2	54.1			
Chrysene-d12 % recovery**	%	TM218	1.68	17.1			
Perylene-d12 % recovery**	%	TM218	0.45	5.9			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

VOC MS (S)

Results Legend		Customer Sample Ref.		DS107	DS111			
#	ISO17025 accredited.			F-268LVB-KNFF	F-S9POVB-TPM1			
M	mCERTS accredited.	Depth (m)		4.50 - 5.00	1.50 - 2.00			
aq	Aqueous / settled sample.	Sample Type		Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Date Sampled		04/10/2022	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Sample Time		08:13	12:30			
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Received		07/10/2022	07/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref		221013-30	221013-30			
(F)	Trigger breach confirmed	Lab Sample No.(s)		27008433	27008491			
1-4*\$@	Sample deviation (see appendix)	AGS Reference		ES12	ES9			
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	0		120	@	@	
Toluene-d8**	%	TM116	0		100	@	@	
4-Bromofluorobenzene**	%	TM116	0		83	@	@	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200		<200	@ M	@ M	
Benzene	<9 µg/kg	TM116	<180		<180	@ M	@ M	
Toluene	<7 µg/kg	TM116	<140		<140	@ M	@ M	
Ethylbenzene	<4 µg/kg	TM116	<80		<80	@ M	@ M	
p/m-Xylene	<10 µg/kg	TM116	<200		<200	@ #	@ #	
o-Xylene	<10 µg/kg	TM116	<200		<200	@ M	@ M	
Sum of BTEX	<40 µg/kg	TM116	<800		<800	@	@	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS107ES12 4.50 - 5.00 SOLID 04/10/2022 00:00:00 07/10/2022 05:00:00 221013-30 27008433 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS111ES9 1.50 - 2.00 SOLID 29/09/2022 00:00:00 07/10/2022 05:00:00 221013-30 27008491 TM048	24/10/2022	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.219	Natural Moisture Content (%)	25.1
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	79.9
Particle Size <4mm	>95%		

Case	
SDG	221013-30
Lab Sample Number(s)	27008491
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS111 ES9
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.0333	<0.003	0.0666	<0.006
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	16.8	<2	33.6	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0142	<0.01	0.0284	<0.02
Arsenic	0.0896	<0.0005	0.179	<0.001
Nitrate as NO3	2.89	<0.3	5.78	<0.6
Total Ammonium Low as NH4	0.183	<0.01	0.366	<0.02
Boron	0.325	<0.01	0.65	<0.02
Cadmium	<0.00008	<0.00008	<0.00016	<0.00016
Chromium	0.0274	<0.001	0.0548	<0.002
Copper	<0.0003	<0.0003	<0.0006	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	0.0153	<0.001	0.0306	<0.002
Zinc	0.0015	<0.001	0.003	<0.002
Calcium (Dis.Filt) mg/l	32.4	<0.2	64.8	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	122	<0.65	244	<1.3

PAH Spec MS - Aqueous (W)

Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	0.0000147	<0.000005	0.0000294	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	17-Oct-2022
pH (pH Units)	8.61
Conductivity (µS/cm)	92
Volume Leachant (Litres)	0.306
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

16/11/2022 10:32:11

10:31:45 16/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.219	Natural Moisture Content (%)	25.1
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	79.9
Particle Size <4mm	>95%		

Case	
SDG	221013-30
Lab Sample Number(s)	27008491
Sampled Date	29-Sep-2022
Customer Sample Ref.	DS111 ES9
Depth (m)	1.50 - 2.00

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	17-Oct-2022
pH (pH Units)	8.61
Conductivity (µS/cm)	92
Volume Leachant (Litres)	0.306
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

16/11/2022 10:32:11

10:31:45 16/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-30
Client Ref.: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Test Completion Dates

Lab Sample No(s)	27008433	27008491
Customer Sample Ref.	DS107	DS111
AGS Ref.	ES12	ES9
Depth	4.50 - 5.00	1.50 - 2.00
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low		20-Oct-2022
Ammonium Soil by Titration	21-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Anions by Kone (w)		24-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022	24-Oct-2022
CEN 2:1 Leachate (1 Stage)		17-Oct-2022
CEN Readings		19-Oct-2022
Chromium III	20-Oct-2022	25-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	24-Oct-2022	20-Oct-2022
Dissolved Metals by ICP-MS		15-Nov-2022
Dissolved Organic/Inorganic Carbon		21-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	19-Oct-2022
Elemental Sulphur	24-Oct-2022	24-Oct-2022
EPH	21-Oct-2022	24-Oct-2022
EPH by GCxGC-FID	18-Oct-2022	19-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	24-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Low Level Cyanide (W)		24-Oct-2022
Low Level Hexavalent Chromium (w)		20-Oct-2022
Mercury Dissolved		21-Oct-2022
Metals in solid samples by OES	20-Oct-2022	20-Oct-2022
Moisture at 105C		17-Oct-2022
Nitrite by Kone (w)		20-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022	20-Oct-2022
PAH by GCMS	21-Oct-2022	21-Oct-2022
PAH Spec MS - Aqueous (W)		24-Oct-2022
pH	21-Oct-2022	21-Oct-2022
pH Value of Filtered Water		16-Nov-2022
Phenols by HPLC (S)	18-Oct-2022	21-Oct-2022
Sample description	13-Oct-2022	17-Oct-2022
Total Organic Carbon	21-Oct-2022	21-Oct-2022
Total Sulphate	19-Oct-2022	19-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-30
Client Ref: F212561

Report Number: 668621
Location: Keadby 3

Superseded Report: 668549

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-31
Your Reference: F212561
Location: Keadby 3
Report No: 665688
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665189 in its entirety.

We received 4 samples on Friday October 07, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

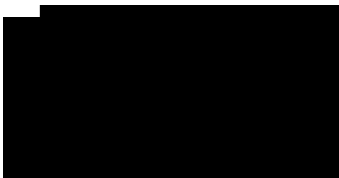
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008512	DS110	ES2	0.10 - 0.10	28/09/2022
27008519	DS110	ES4	0.40 - 0.40	28/09/2022
27008526	DS110	ES6	0.70 - 0.70	28/09/2022
27008534	DS110	ES7	1.20 - 1.20	28/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)					
	Customer Sample Reference	27008519	27008534			
	AGS Reference	DS110	DS110			
	Depth (m)	ES4	ES7			
	Container	0.40 - 0.40	1.20 - 1.20			
	Sample Type	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215)	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2		X	X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 2		X	X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X			
Chromium III	All	NDPs: 0 Tests: 2		X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2		X	X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2		X	X	
Elemental Sulphur	All	NDPs: 0 Tests: 2		X	X	
EPH	All	NDPs: 0 Tests: 2		X	X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2		X	X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X	X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2		X	X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 2		X	X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2		X	X	
PAH by GCMS	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Results Legend	Lab Sample No(s)		27008519		27008534	
	Customer Sample Reference		DS110		DS110	
AGS Reference		ES4		ES7		
Depth (m)		0.40 - 0.40		1.20 - 1.20		
Container		1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type		S	S	S	S	S
pH	All	NDPs: 0 Tests: 2	X		X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X	
Sample description	All	NDPs: 0 Tests: 2	X		X	
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X	
Total Sulphate	All	NDPs: 0 Tests: 2	X		X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X

Sample Types -
 S - Soil/Solid
 UNS - Unspecified Solid
 GW - Ground Water
 SW - Surface Water
 LE - Land Leachate
 PL - Prepared Leachate
 PR - Process Water
 SA - Saline Water
 TE - Trade Effluent
 TS - Treated Sewage
 US - Untreated Sewage
 RE - Recreational Water
 DW - Drinking Water Non-regulatory
 UNL - Unspecified Liquid
 SL - Sludge
 G - Gas
 OTH - Other



CERTIFICATE OF ANALYSIS

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SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008519	DS110	0.40 - 0.40	Grey	Loamy Sand	Stones	Vegetation
27008534	DS110	1.20 - 1.20	Dark Brown	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Results Legend		Customer Sample Ref.	DS110	DS110			
#	ISO17025 accredited.		ADS1220928020	ADS1220928023			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:30	15:55			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-31	221013-31			
	(F) Trigger breach confirmed	SDG Ref	27008519	27008534			
	1-4* Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	16			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	6.5 #	9.05 #			
pH	1 pH Units	TM133	8.72 M	8.4 M			
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M			
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	15.7	24.6			
Arsenic	<0.6 mg/kg	TM181	59.8 M	74.7 M			
Boron	<0.7 mg/kg	TM181	24.6 #	24.1 #			
Cadmium	<0.02 mg/kg	TM181	0.175 M	0.223 M			
Chromium	<0.9 mg/kg	TM181	15.7 M	24.6 M			
Copper	<1.4 mg/kg	TM181	81.3 M	73.7 M			
Iron	<1000 mg/kg	TM181	46700 #	34700 #			
Lead	<0.7 mg/kg	TM181	30 M	35.8 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	41.3 M	40.8 M			
Selenium	<1 mg/kg	TM181	2.52 #	2.27 #			
Zinc	<1.9 mg/kg	TM181	86.8 M	48.5 M			
Sulphate, Total	<48 mg/kg	TM221	531 M	319 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0177	0.0106			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.14	0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0407 M	0.0151 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.72	3.21			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35			
EPH Surrogate % recovery**	%	TM415	102	102			



CERTIFICATE OF ANALYSIS

SDG: 221013-31
 Client Ref.: F212561

Report Number: 665688
 Location: Keadby 3

Superseded Report: 665189

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m)	DS110 ADS1220928020 0.40 - 0.40	DS110 ADS1220928023 1.20 - 1.20			
		Sample Type	Soil/Solid (S)	Soil/Solid (S)			
Date Sampled		Date Sampled	28/09/2022	28/09/2022			
Sample Time		Sample Time	15:30	15:55			
Date Received		Date Received	07/10/2022	07/10/2022			
SDG Ref		SDG Ref	221013-31	221013-31			
Lab Sample No.(s)		Lab Sample No.(s)	27008519	27008534			
AGS Reference		AGS Reference	ES4	ES7			
Component	LOD/Units	Method					
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 @ M	<35 @ M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

PAH by GCMS

Results Legend		Customer Sample Ref.	DS110	DS110			
#	ISO17025 accredited.		ADS1220928020	ADS1220928023			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:30	15:55			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	07/10/2022	07/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-31	221013-31			
	(F) Trigger breach confirmed	SDG Ref	27008519	27008534			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	75.8	72.2			
Acenaphthene-d10 % recovery**	%	TM218	81.1	78.7			
Phenanthrene-d10 % recovery**	%	TM218	69.3	62.3			
Chrysene-d12 % recovery**	%	TM218	41.9	36.2			
Perylene-d12 % recovery**	%	TM218	22.1	15.9			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

TPH CWG (S)

Results Legend		Customer Sample Ref.		DS110				
#	ISO17025 accredited.			ADS1220928023				
M	mCERTS accredited.			1.20 - 1.20				
aq	Aqueous / settled sample.			Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.			28/09/2022				
tot.unfilt	Total / unfiltered sample.			15:55				
	* Subcontracted - refer to subcontractor report for accreditation status.			07/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221013-31				
(F)	Trigger breach confirmed			27008534				
1-4*§	Sample deviation (see appendix)			ES7				
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	80.1	@				
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@				
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10	@				
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10	@				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1480	@ #				
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	@				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000					
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@				
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@				
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10	@				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #				
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000					
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000					
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50	@				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50	@				
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	@				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

VOC MS (S)

Results Legend		Customer Sample Ref.		DS110	DS110				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		ADS1220928020	ADS1220928023				
M	mCERTS accredited.			0.40 - 0.40	1.20 - 1.20				
aq	Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)				
disz	Disolved / filtered sample.			28/09/2022	28/09/2022				
tot.unfilt	Total / unfiltered sample.			15:30	15:55				
	* Subcontracted - refer to subcontractor report for accreditation status.			07/10/2022	07/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.			221013-31	221013-31				
	(F) Trigger breach confirmed			27008519	27008534				
	1-4*# @ Sample deviation (see appendix)			ES4	ES7				
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM116	120	125					
			@	@					
Toluene-d8**	%	TM116	101	100					
			@	@					
4-Bromofluorobenzene**	%	TM116	86	78.9					
			@	@					
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<200					
			@ M	@ M					
Benzene	<9 µg/kg	TM116	<180	<180					
			@ M	@ M					
Toluene	<7 µg/kg	TM116	<140	<140					
			@ M	@ M					
Ethylbenzene	<4 µg/kg	TM116	<80	<80					
			@ M	@ M					
p/m-Xylene	<10 µg/kg	TM116	<200	<200					
			@ #	@ #					
o-Xylene	<10 µg/kg	TM116	<200	<200					
			@ M	@ M					
Sum of Detected Xylenes	<0.02 mg/kg	TM116		<0.4					
				@					
Sum of BTEX	<40 µg/kg	TM116	<800	<800					
			@	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS110E54 0.40 - 0.40 SOLID 28/09/2022 00:00:00 07/10/2022 17:00:00 221013-31 27008519 TM048	22/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-31
Client Ref.: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Test Completion Dates

Lab Sample No(s)	27008519	27008534
Customer Sample Ref.	DS110	DS110
AGS Ref.	ES4	ES7
Depth	0.40 - 0.40	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Asbestos ID in Solid Samples	22-Oct-2022	
Chromium III	20-Oct-2022	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022	20-Oct-2022
Elemental Sulphur	20-Oct-2022	24-Oct-2022
EPH	24-Oct-2022	21-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022
EPH CWG GC (S)		17-Oct-2022
GRO by GC-FID (S)	24-Oct-2022	21-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022	20-Oct-2022
PAH by GCMS	21-Oct-2022	19-Oct-2022
pH	21-Oct-2022	18-Oct-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022
Total Organic Carbon	21-Oct-2022	20-Oct-2022
Total Sulphate	18-Oct-2022	18-Oct-2022
TPH CWG GC (S)		21-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-31
Client Ref: F212561

Report Number: 665688
Location: Keadby 3

Superseded Report: 665189

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	24 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221013-33
Your Reference:	F212561
Location:	Keadby 3
Report No:	665758
Order Number:	386/121917/CP

We received 4 samples on Wednesday October 12, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008610	MS-BH24	ES2	0.10 - 0.10	04/10/2022
27008618	MS-BH24	ES4	0.40 - 0.40	10/10/2022
27008625	MS-BH24	ES5	0.80 - 0.80	04/10/2022
27008632	MS-BH24	ES8	1.20 - 1.20	10/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> <p>Sample Types -</p> <ul style="list-style-type: none"> S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other 	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27008618	MS-BH24	ES4	0.40 - 0.40	1.20 - 1.20	S
			MS-BH24			60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
					1kg TUB with Handle (ALE260)	S	
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X				
Chromium III	All	NDPs: 0 Tests: 2	X	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X	X			
Elemental Sulphur	All	NDPs: 0 Tests: 2	X	X			
EPH	All	NDPs: 0 Tests: 2	X	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X	X		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X	X			
PAH by GCMS	All	NDPs: 0 Tests: 2	X	X			
PCBs by GCMS	All	NDPs: 0 Tests: 1	X				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	27008618	27008632			
	Customer Sample Reference	MS-BH24	MS-BH24			
	AGS Reference	ES4	ES4	ES8		
	Depth (m)	0.40 - 0.40	0.40 - 0.40	1.20 - 1.20		
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S
pH	All	NDPs: 0 Tests: 2		X	X	
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2		X	X	
Sample description	All	NDPs: 0 Tests: 2		X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 2		X	X	
Total Sulphate	All	NDPs: 0 Tests: 2		X	X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008618	MS-BH24	0.40 - 0.40	Dark Brown	Sandy Loam	Stones	Vegetation
27008632	MS-BH24	1.20 - 1.20	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH24	MS-BH24			
#	ISO17025 accredited.		ADS4221004012	ADS4221004016			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	10/10/2022	10/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:08	14:46			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-33	221013-33			
	(F) Trigger breach confirmed	SDG Ref	27008618	27008632			
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES8			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	13	16			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	M	M	
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	M	M	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	M	M	
Xylenols	<0.015 mg/kg	TM062 (S)	0.0575	<0.015	M	M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	0.0575	<0.035	M	M	
Soil Organic Matter (SOM)	<0.35 %	TM132	4.67	0.381	#	#	
pH	1 pH Units	TM133	8.14	8.2	M	M	
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	M	M	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	M	M	
Cyanide, Total	<1 mg/kg	TM153	<1	<1	M	M	
Cyanide, Free	<1 mg/kg	TM153	<1	<1	M	M	
PCB congener 28	<3 µg/kg	TM168	<3		M		
PCB congener 52	<3 µg/kg	TM168	<3		M		
PCB congener 101	<3 µg/kg	TM168	<3		M		
PCB congener 118	<3 µg/kg	TM168	<3		M		
PCB congener 138	<3 µg/kg	TM168	<3		M		
PCB congener 153	<3 µg/kg	TM168	<3		M		
PCB congener 180	<3 µg/kg	TM168	<3		M		
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21				
PCB congener 81	<3 µg/kg	TM168	<3		M		
PCB congener 77	<3 µg/kg	TM168	<3		M		
PCB congener 123	<3 µg/kg	TM168	<3		M		
PCB congener 114	<3 µg/kg	TM168	<3		M		
PCB congener 105	<3 µg/kg	TM168	<3		M		
PCB congener 126	<3 µg/kg	TM168	<3		M		
PCB congener 167	<3 µg/kg	TM168	<3		M		
PCB congener 156	<3 µg/kg	TM168	<3		M		
PCB congener 157	<3 µg/kg	TM168	<3		M		
PCB congener 169	<3 µg/kg	TM168	<3		M		
PCB congener 189	<3 µg/kg	TM168	<3		M		
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH24 ADS4221004012 0.40 - 0.40 Soil/Solid (S) 10/10/2022 16:08 12/10/2022 221013-33 27008618 ES4	MS-BH24 ADS4221004016 1.20 - 1.20 Soil/Solid (S) 10/10/2022 14:46 12/10/2022 221013-33 27008632 ES8			
# ISO17025 accredited.		Depth (m)					
M mCERTS accredited.		Sample Type					
aq Aqueous / settled sample.		Date Sampled					
dis.filter Dissolved / filtered sample.		Sample Time					
tot.unfilt Total / unfiltered sample.		Date Received					
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref					
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)					
(F) Trigger breach confirmed		AGS Reference					
1-4*@@ Sample deviation (see appendix)		Method					
Component	LOD/Units	Method					
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 ♦ M	<15 ♦ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	13.6	6.18			
Arsenic	<0.6 mg/kg	TM181	15.9 M	2.75 M			
Boron	<0.7 mg/kg	TM181	10.7 #	2.29 #			
Cadmium	<0.02 mg/kg	TM181	0.28 M	0.0588 M			
Chromium	<0.9 mg/kg	TM181	13.6 M	6.18 M			
Copper	<1.4 mg/kg	TM181	21.6 M	3.29 M			
Iron	<1000 mg/kg	TM181	22500 #	5380 #			
Lead	<0.7 mg/kg	TM181	65.2 M	7.89 M			
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M			
Nickel	<0.2 mg/kg	TM181	20.6 M	8.12 M			
Selenium	<1 mg/kg	TM181	1.16 #	<1 #			
Zinc	<1.9 mg/kg	TM181	81.9 M	20 M			
Sulphate, Total	<48 mg/kg	TM221	283 M	199 M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.00945	0.00662			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.94	0.11			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0218 M	0.0703 M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	6.78	<1			
EPH (C5-C40)	<35 mg/kg	TM415	51.3	<35			
EPH Surrogate % recovery**	%	TM415	105	102			
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	51.3 M	<35 M			



CERTIFICATE OF ANALYSIS

SDG: 221013-33

Report Number: 665758

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	MS-BH24	MS-BH24			
# ISO17025 accredited.		Depth (m)	MS-BH24	MS-BH24			
M mCERTS accredited.		Sample Type	ADS4221004012	ADS4221004016			
aq Aqueous / settled sample.		Date Sampled	0.40 - 0.40	1.20 - 1.20			
diss.filt Dissolved / filtered sample.		Sample Time	Soil/Solid (S)	Soil/Solid (S)			
tot.unfilt Total / unfiltered sample.		Date Received	10/10/2022	10/10/2022			
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref	16:08	14:46			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)	12/10/2022	12/10/2022			
(F) Trigger breach confirmed		AGS Reference	221013-33	221013-33			
1-4*% Sample deviation (see appendix)			27008618	27008632			
			ES4	ES8			
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	<20			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH24	MS-BH24			
#	ISO17025 accredited.		ADS4221004012	ADS4221004016			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.	Sample Type	10/10/2022	10/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:08	14:46			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-33	221013-33			
	(F) Trigger breach confirmed	SDG Ref	27008618	27008632			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES8			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	85.8	84			
Acenaphthene-d10 % recovery**	%	TM218	91.4	87.9			
Phenanthrene-d10 % recovery**	%	TM218	96.1	88.6			
Chrysene-d12 % recovery**	%	TM218	89.6	73			
Perylene-d12 % recovery**	%	TM218	79.4	70.2			
Naphthalene	<9 µg/kg	TM218	57.9	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	12.9	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	11.5	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	202	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	41.1	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	295	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	270	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	121	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	147	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	157	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	48.9	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	102	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	83.4	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	74.3	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1620	<118			



CERTIFICATE OF ANALYSIS

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH24	MS-BH24			
#	ISO17025 accredited.		ADS4221004012	ADS4221004016			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	10/10/2022	10/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:08	14:46			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-33	221013-33			
(F)	Trigger breach confirmed	SDG Ref	27008618	27008632			
1-4*§@	Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES8			
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	120	127			
Toluene-d8**	%	TM116	98.3	100			
4-Bromofluorobenzene**	%	TM116	83.5	91.3			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M	<10 M			
Benzene	<9 µg/kg	TM116	<180 M	<9 M			
Toluene	<7 µg/kg	TM116	<140 M	<7 M			
Ethylbenzene	<4 µg/kg	TM116	<80 M	<4 M			
p/m-Xylene	<10 µg/kg	TM116	<200 #	<10 #			
o-Xylene	<10 µg/kg	TM116	<200 M	<10 M			
Sum of BTEX	<40 µg/kg	TM116	<800	<40			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Detected

Cust. Sample Ref.	MS-BH24ES4
Depth (m)	0.40 - 0.40
Sample Type	SOLID
Date Sampled	10/10/2022 00:00:00
Date Received	12/10/2022 05:00:00
SDG	221013-33
Original Sample	27008618
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-33
Client Ref.: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27008618	27008632
Customer Sample Ref.	MS-BH24	MS-BH24
AGS Ref.	ES4	ES8
Depth	0.40 - 0.40	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Asbestos ID in Solid Samples	24-Oct-2022	
Chromium III	20-Oct-2022	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022	20-Oct-2022
Elemental Sulphur	24-Oct-2022	20-Oct-2022
EPH	21-Oct-2022	21-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	21-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022	17-Oct-2022
PAH by GCMS	17-Oct-2022	17-Oct-2022
PCBs by GCMS	18-Oct-2022	
pH	21-Oct-2022	18-Oct-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	20-Oct-2022
Total Sulphate	18-Oct-2022	18-Oct-2022
VOC MS (S)	24-Oct-2022	21-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-33
Client Ref: F212561

Report Number: 665758
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 09 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-34
Your Reference: F212561
Location: Keadby 3
Report No: 667795
Order Number: 386/121917/CP

This report has been revised and directly supersedes 666566 in its entirety.

We received 9 samples on Wednesday October 12, 2022 and 3 of these samples were scheduled for analysis which was completed on Wednesday November 09, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

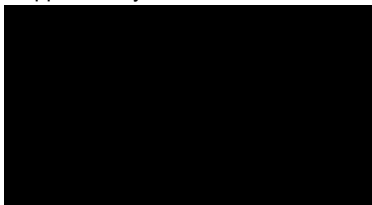
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008644	BH105	ES1	0.10 - 0.10	05/10/2022
27008679	BH105	ES4	0.50 - 0.50	05/10/2022
27008687	BH105	ES5	1.00 - 1.00	05/10/2022
27008697	BH105	ES6	1.20 - 1.20	05/10/2022
27008704	BH105	ES8	1.80 - 1.80	05/10/2022
27008651	BH105	ES12	2.80 - 2.80	05/10/2022
27008658	BH105	ES14	3.80 - 3.80	05/10/2022
27008665	BH105	ES16	4.80 - 4.80	05/10/2022
27008672	BH105	ES18	5.80 - 5.80	05/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



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Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	27008704	27008658	27008672	27008704	27008658	27008672	
	Customer Sample Reference	BH105	BH105	BH105	BH105	BH105	BH105	BH105
	AGS Reference	ES8	ES14	ES18	ES8	ES14	ES18	ES18
	Depth (m)	1.80 - 1.80	3.80 - 3.80	5.80 - 5.80	1.80 - 1.80	3.80 - 3.80	5.80 - 5.80	5.80 - 5.80
	Container	60g VOC (ALE215) 1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	60g VOC (ALE215)	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S	S	S
Ammonium Low	All	NDPs: 0 Tests: 1				X		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3	X	X			X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 3	X	X			X	
Anions by Kone (w)	All	NDPs: 0 Tests: 1				X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2	X			X		
CEN Readings	All	NDPs: 0 Tests: 1				X		
Chromium III	All	NDPs: 0 Tests: 4	X	X	X	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3	X	X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1				X		
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 1				X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3	X	X			X	
Elemental Sulphur	All	NDPs: 0 Tests: 3	X	X			X	
EPH	All	NDPs: 0 Tests: 3	X	X			X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3	X	X			X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		X	X		X	



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Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	27008704	27008658	27008672	
	Customer Sample Reference	BH105	BH105	BH105	
	AGS Reference	ES8	ES14	ES18	
	Depth (m)	1.80 - 1.80	3.80 - 3.80	5.80 - 5.80	
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type	S	S	S	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3	X	X	X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 1			X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 1			X
Mercury Dissolved	All	NDPs: 0 Tests: 1			X
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	X	X	X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 1			X
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3	X	X	X
PAH by GCMS	All	NDPs: 0 Tests: 3	X	X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1			X
pH	All	NDPs: 0 Tests: 3	X	X	X
pH Value of Filtered Water	All	NDPs: 0 Tests: 1			X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X



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Client Ref.: F212561

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Location: Keadby 3

Superseded Report: 666566

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	27008704	27008658	27008672
	Customer Sample Reference	BH105	BH105	BH105
	AGS Reference	ES8	ES14	ES18
	Depth (m)	1.80 - 1.80	3.80 - 3.80	5.80 - 5.80
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S
VOC MS (S)	All	NDPs: 0 Tests: 3	X	X
			X	X



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008658	BH105	3.80 - 3.80	Dark Brown	Silty Sand	Stones	Vegetation
27008672	BH105	5.80 - 5.80	Dark Brown	Silty Sand	None	None
27008704	BH105	1.80 - 1.80	Dark Brown	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Client Ref.: F212561

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Results Legend		Customer Sample Ref.		BH105	BH105	BH105		
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-4CNWVB-UITR	F-1NNWVB-5FRW	F-4PNWVB-FQBE			
M mCERTS accredited.			1.80 - 1.80	3.80 - 3.80	5.80 - 5.80			
aq Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt Dissolved / filtered sample.			05/10/2022	05/10/2022	05/10/2022			
tot.unfilt Total / unfiltered sample.			12:16	12:25	12:40			
* Subcontracted - refer to subcontractor report for accreditation status.			12/10/2022	12/10/2022	12/10/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221013-34	221013-34	221013-34			
(F) Trigger breach confirmed			27008704	27008658	27008672			
1-4*§ Sample deviation (see appendix)			ES8	ES14	ES18			
Component	LOD/Units		Method					
Moisture Content Ratio (% of as received sample)	%	PM024	20	22	35			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15	M	M	M
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12	M	M	M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	M	M	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	M	M	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	M	M	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	M	M	M
Soil Organic Matter (SOM)	<0.35 %	TM132	10.9	11.9	14.7	#	#	#
pH	1 pH Units	TM133	8.66	8.6	8.52	M	M	M
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	<10	M	M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	M	M	M
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	M	M	M
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	M	M	M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15	<15	@ M	@ M	@ M
Chromium, Trivalent	<0.9 mg/kg	TM181	24.5	27.3	37			
Arsenic	<0.6 mg/kg	TM181	72.2	73.2	97.5	M	M	M
Boron	<0.7 mg/kg	TM181	24.4	28.6	55.8	#	#	#
Cadmium	<0.02 mg/kg	TM181	0.167	0.204	0.219	M	M	M
Chromium	<0.9 mg/kg	TM181	24.5	27.3	37	M	M	M
Copper	<1.4 mg/kg	TM181	70.8	74	78.4	M	M	M
Iron	<1000 mg/kg	TM181	30400	30700	29600	#	#	#
Lead	<0.7 mg/kg	TM181	36.9	41.9	49.4	M	M	M
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1	<0.1	M	M	M
Nickel	<0.2 mg/kg	TM181	38.8	40.9	43.4	M	M	M
Selenium	<1 mg/kg	TM181	2.03	2.38	4.45	#	#	#
Zinc	<1.9 mg/kg	TM181	45.1	50.5	59.2	M	M	M
Sulphate, Total	<48 mg/kg	TM221	520	589	695	M	M	M
Total Sulphur (ASB)	<0.0016 %	TM221	0.0173	0.0196	0.0232			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1	0.23	0.27			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0561	0.0358	0.122	M	M	M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1	<1	36.3			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	<35			
EPH Surrogate % recovery**	%	TM415	97.1	109	108			



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Location: Keadby 3

Superseded Report: 666566

PAH by GCMS

Results Legend		Customer Sample Ref.	BH105	BH105	BH105			
#	ISO17025 accredited.		F-4CNWVB-UITR	F-1NNWVB-5FRW	F-4PNWVB-FQBE			
M	mCERTS accredited.		1.80 - 1.80	3.80 - 3.80	5.80 - 5.80			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	05/10/2022	05/10/2022	05/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:16	12:25	12:40			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-34	221013-34	221013-34			
	(F) Trigger breach confirmed	SDG Ref	27008704	27008658	27008672			
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES8	ES14	ES18			
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	71.2	69.2	62.6			
Acenaphthene-d10 % recovery**	%	TM218	74.1	72.7	65.2			
Phenanthrene-d10 % recovery**	%	TM218	45.3	43.8	37.9			
Chrysene-d12 % recovery**	%	TM218	15.9	15.1	12.6			
Perylene-d12 % recovery**	%	TM218	7.51	6.61	5.47			
Naphthalene	<9 µg/kg	TM218	<9	<9	<9			
			M	M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12			
			M	M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8			
			M	M	M			
Fluorene	<10 µg/kg	TM218	<10	<10	<10			
			M	M	M			
Phenanthrene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Anthracene	<16 µg/kg	TM218	<16	<16	<16			
			M	M	M			
Fluoranthene	<17 µg/kg	TM218	<17	<17	<17			
			M	M	M			
Pyrene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14			
			M	M	M			
Chrysene	<10 µg/kg	TM218	<10	<10	<10			
			M	M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14			
			M	M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15			
			M	M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18			
			M	M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23			
			M	M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24			
			M	M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118	<118			



CERTIFICATE OF ANALYSIS

SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

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VOC MS (S)

Results Legend		Customer Sample Ref.	BH105		
# ISO17025 accredited.	M mCERTS accredited.		F-4CNWVB-UITR	F-1NNWVB-5FRW	F-4PNWVB-FQBE
aq Aqueous / settled sample.	aq Aqueous / settled sample.	Depth (m)	1.80 - 1.80	3.80 - 3.80	5.80 - 5.80
diss.fltr Dissolved / filtered sample.	diss.fltr Dissolved / filtered sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfltr Total / unfiltered sample.	tot.unfltr Total / unfiltered sample.	Date Sampled	05/10/2022	05/10/2022	05/10/2022
* Subcontracted - refer to subcontractor report for accreditation status.	* Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	12:16	12:25	12:40
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	12/10/2022	12/10/2022	12/10/2022
(F) Trigger breach confirmed	(F) Trigger breach confirmed	Date Received	221013-34	221013-34	221013-34
1-4* @ Sample deviation (see appendix)	1-4* @ Sample deviation (see appendix)	SDG Ref	27008704	27008658	27008672
		Lab Sample No.(s)	ES8	ES14	ES18
		AGS Reference			
Component	LOD/Units	Method			
Dibromofluoromethane**	%	TM116	133 @	114 @	123 @
Toluene-d8**	%	TM116	98.6 @	109 @	103 @
4-Bromofluorobenzene**	%	TM116	72.8 @	85.4 @	90.5 @
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	<200 @ M	<200 @ M
Benzene	<9 µg/kg	TM116	<180 @ M	<180 @ M	<180 @ M
Toluene	<7 µg/kg	TM116	<140 @ M	<140 @ M	<140 @ M
Ethylbenzene	<4 µg/kg	TM116	<80 @ M	<80 @ M	<80 @ M
p/m-Xylene	<10 µg/kg	TM116	<200 @ #	<200 @ #	<200 @ #
o-Xylene	<10 µg/kg	TM116	<200 @ M	<200 @ M	<200 @ M
Sum of BTEX	<40 µg/kg	TM116	<800 @	<800 @	<800 @



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Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH105ES8 1.80 - 1.80 SOLID 05/10/2022 00:00:00 12/10/2022 05:00:00 221013-34 27008704 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH105ES18 5.80 - 5.80 SOLID 05/10/2022 00:00:00 12/10/2022 05:00:00 221013-34 27008672 TM048	24/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.240	Natural Moisture Content (%)	37.3
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	72.8
Particle Size <4mm	>95%		

Case	
SDG	221013-34
Lab Sample Number(s)	27008672
Sampled Date	05-Oct-2022
Customer Sample Ref.	BH105 ES18
Depth (m)	5.80 - 5.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
Low Level Hexavalent Chromium	0.101	<0.015	0.202	<0.03
Nitrite as NO2	<0.05	<0.05	<0.1	<0.1
Sulphate (soluble)	99.8	<2	200	<4
Total Cyanide - Low Level	<0.005	<0.005	<0.01	<0.01
Chromium III (Low)	<0.003	<0.003	<0.006	<0.006
Dissolved Organic Carbon	<3	<3	<6	<6
Free Cyanide - Low Level	<0.0025	<0.0025	<0.005	<0.005
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.00002	<0.00002
Ammoniacal Nitrogen as N	0.0213	<0.01	0.0426	<0.02
Arsenic	0.0366	<0.0005	0.0732	<0.001
Nitrate as NO3	20.2	<0.3	40.4	<0.6
Total Ammonium Low as NH4	0.273	<0.01	0.546	<0.02
Boron	4.03	<0.01	8.06	<0.02
Cadmium	0.000274	<0.00008	0.000548	<0.00016
Chromium	0.0809	<0.001	0.162	<0.002
Copper	<0.0003	<0.0003	<0.0006	<0.0006
Lead	<0.0002	<0.0002	<0.0004	<0.0004
Nickel	<0.0004	<0.0004	<0.0008	<0.0008
Selenium	0.1	<0.00183	0.2	<0.00366
Zinc	0.00151	<0.001	0.00302	<0.002
Calcium (Dis.Filt) mg/l	35.6	<0.2	71.2	<0.4
Iron (Dis.Filt) mg/l	<0.019	<0.019	<0.038	<0.038
Hardness dissolved	220	<0.65	440	<1.3
PAH Spec MS - Aqueous (W)				
Naphthalene by GCMS	<0.00001	<0.00001	<0.00002	<0.00002
Acenaphthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Acenaphthylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Phenanthrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Fluorene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Chrysene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benz(a)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(b)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(k)fluoranthene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.47
Conductivity (µS/cm)	422
Volume Leachant (Litres)	0.285
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

09/11/2022 10:07:52

10:07:18 09/11/2022



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Keadby 3
Mass Sample taken (kg)	0.240	Natural Moisture Content (%)	37.3
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	72.8
Particle Size <4mm	>95%		

Case	
SDG	221013-34
Lab Sample Number(s)	27008672
Sampled Date	05-Oct-2022
Customer Sample Ref.	BH105 ES18
Depth (m)	5.80 - 5.80

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)	
	Result	Limit of Detection	Result	Limit of Detection
PAH Spec MS - Aqueous (W)				
Benzo(a)pyrene by GCMS	<0.000002	<0.000002	<0.000004	<0.000004
Dibenzo(ah)anthracene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Benzo(ghi)perylene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
Indeno(123cd)pyrene by GCMS	<0.000005	<0.000005	<0.00001	<0.00001
PAH 16 EPA Total by GCMS	<0.000082	<0.000082	<0.000164	<0.000164

Leach Test Information

Date Prepared	14-Oct-2022
pH (pH Units)	8.47
Conductivity (µS/cm)	422
Volume Leachant (Litres)	0.285
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)
 Stated limits are for guidance only and ALS Laboratories (UK) Limited cannot be held responsible for any discrepancies with current legislation

09/11/2022 10:07:52

10:07:18 09/11/2022



CERTIFICATE OF ANALYSIS

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SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-34
Client Ref.: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

Test Completion Dates

Lab Sample No(s)	27008658	27008672	27008704
Customer Sample Ref.	BH105	BH105	BH105
AGS Ref.	ES14	ES18	ES8
Depth	3.80 - 3.80	5.80 - 5.80	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Ammonium Low		20-Oct-2022	
Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022	20-Oct-2022
Anions by Kone (w)		20-Oct-2022	
Asbestos ID in Solid Samples		24-Oct-2022	24-Oct-2022
CEN 2:1 Leachate (1 Stage)		14-Oct-2022	
CEN Readings		18-Oct-2022	
Chromium III	20-Oct-2022	25-Oct-2022	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022	18-Oct-2022
Dissolved Metals by ICP-MS		09-Nov-2022	
Dissolved Organic/Inorganic Carbon		19-Oct-2022	
Easily Liberated Sulphide	19-Oct-2022	19-Oct-2022	20-Oct-2022
Elemental Sulphur	24-Oct-2022	20-Oct-2022	24-Oct-2022
EPH	21-Oct-2022	21-Oct-2022	21-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022	17-Oct-2022
GRO by GC-FID (S)	21-Oct-2022	21-Oct-2022	21-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022	19-Oct-2022
Low Level Cyanide (W)		25-Oct-2022	
Low Level Hexavalent Chromium (w)		20-Oct-2022	
Mercury Dissolved		20-Oct-2022	
Metals in solid samples by OES	19-Oct-2022	19-Oct-2022	19-Oct-2022
Moisture at 105C		14-Oct-2022	
Nitrite by Kone (w)		19-Oct-2022	
NO3, NO2 and TON by KONE (s)	20-Oct-2022	17-Oct-2022	20-Oct-2022
PAH by GCMS	19-Oct-2022	19-Oct-2022	19-Oct-2022
PAH Spec MS - Aqueous (W)		20-Oct-2022	
pH	18-Oct-2022	21-Oct-2022	21-Oct-2022
pH Value of Filtered Water		09-Nov-2022	
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	20-Oct-2022	21-Oct-2022
Total Sulphate	18-Oct-2022	14-Oct-2022	18-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-34
Client Ref: F212561

Report Number: 667795
Location: Keadby 3

Superseded Report: 666566

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 31 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-36
Your Reference: F212561
Location: Keadby 3
Report No: 666591
Order Number: 386/121917/CP

This report has been revised and directly supersedes 666550 in its entirety.

We received 4 samples on Wednesday October 12, 2022 and 3 of these samples were scheduled for analysis which was completed on Monday October 31, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

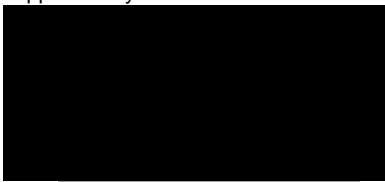
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27008725	MS-BH23	ES2	0.10 - 0.10	30/09/2022
27008733	MS-BH23	ES4	0.40 - 0.40	30/09/2022
27008741	MS-BH23	ES8	0.80 - 0.80	30/09/2022
27008718	MS-BH23	ES10	1.20 - 1.20	30/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27008718	MS-BH23	ES10	1.20 - 1.20	60g VOC (ALE215)	S
		27008733	MS-BH23	ES4	0.40 - 0.40	250g Amber Jar (ALE210)	S
		27008725	MS-BH23	ES2	0.10 - 0.10	1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						250g Amber Jar (ALE210)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1					
Chromium III	All	NDPs: 0 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2					
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					



CERTIFICATE OF ANALYSIS

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SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27008725	27008733	27008718
Customer Sample Reference	MS-BH23	MS-BH23	MS-BH23
AGS Reference	ES2	ES4	ES10
Depth (m)	0.10 - 0.10	0.40 - 0.40	1.20 - 1.20
Container	250g Amber Jar (ALE210)	250g Amber Jar (ALE210) 60g VOC (ALE215)	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE280)
Sample Type	S	S	S

Parameter	All	NDPs: 0 Tests: 2	27008725	27008733	27008718
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X
PCBs by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 2	X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X		X
Sample description	All	NDPs: 0 Tests: 3	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 2	X		X
Total Sulphate	All	NDPs: 0 Tests: 2	X		X
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27008718	MS-BH23	1.20 - 1.20	Red	Sand	Stones	Vegetation
27008725	MS-BH23	0.10 - 0.10	Dark Brown	Sandy Loam	Vegetation	None
27008733	MS-BH23	0.40 - 0.40	Dark Brown	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Results Legend		Customer Sample Ref.		MS-BH23	MS-BH23	MS-BH23		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		MS-BH23 ADS4220930002 0.10 - 0.10 Soil/Solid (S) 30/09/2022 13:46 12/10/2022 221013-36 27008725 ES2	MS-BH23 ADS4220930004 0.40 - 0.40 Soil/Solid (S) 30/09/2022 13:51 12/10/2022 221013-36 27008733 ES4	MS-BH23 ADS4220930012 1.20 - 1.20 Soil/Solid (S) 30/09/2022 13:59 12/10/2022 221013-36 27008718 ES10		
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	13	14	15			
2,4,5-T*	<0.01 mg/kg	SUB	<0.01					
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01					
2,4-D*	<0.01 mg/kg	SUB	<0.01					
2,4-DB*	<0.01 mg/kg	SUB	<0.01					
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01					
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01					
Acifluorfen*	<0.01 mg/kg	SUB	<0.01					
Bentazone*	<0.01 mg/kg	SUB	<0.01					
Bromoxynil*	<0.01 mg/kg	SUB	<0.01					
Dicamba*	<0.01 mg/kg	SUB	<0.01					
Diclofop*	<0.01 mg/kg	SUB	<0.01					
Dinoseb*	<0.01 mg/kg	SUB	<0.01					
DNOC*	<0.01 mg/kg	SUB	<0.01					
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01					
loxynil*	<0.01 mg/kg	SUB	<0.01					
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01					
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01					
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01					
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01					
Triclopyr*	<0.01 mg/kg	SUB	<0.01					
Triclosan*	<0.01 mg/kg	SUB	<0.01					
Exchangeable Ammonia as NH4	<15 mg/kg	TM024		<15	<15			
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12			
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01			
Cresols	<0.01 mg/kg	TM062 (S)		0.0116	<0.01			
Xylenols	<0.015 mg/kg	TM062 (S)		0.0348	<0.015			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		0.0464	<0.035			
Soil Organic Matter (SOM)	<0.35 %	TM132		4.03	<0.35			
pH	1 pH Units	TM133		8.15	8.42			
Sulphur, Elemental	<10 mg/kg	TM136		<10	<10			
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6	<0.6			
Cyanide, Total	<1 mg/kg	TM153		<1	<1			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Results Legend		Customer Sample Ref.	MS-BH23	MS-BH23	MS-BH23		
#	ISO17025 accredited.		ADS4220930002	ADS4220930004	ADS4220930012		
M	mCERTS accredited.		0.10 - 0.10	0.40 - 0.40	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
dis.filt	Dissolved / filtered sample.	Sample Type	30/09/2022	30/09/2022	30/09/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:46	13:51	13:59		
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022	12/10/2022		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Date Received	221013-36	221013-36	221013-36		
(F)	Trigger breach confirmed	SDG Ref	27008725	27008733	27008718		
1-4*#	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES4	ES10		
		AGS Reference					
Component	LOD/Units	Method					
Cyanide, Free	<1 mg/kg	TM153		<1 @ M	<1 @ M		
PCB congener 28	<3 µg/kg	TM168		<3 M			
PCB congener 52	<3 µg/kg	TM168		<3 M			
PCB congener 101	<3 µg/kg	TM168		<3 M			
PCB congener 118	<3 µg/kg	TM168		<3 M			
PCB congener 138	<3 µg/kg	TM168		<3 M			
PCB congener 153	<3 µg/kg	TM168		<3 M			
PCB congener 180	<3 µg/kg	TM168		<3 M			
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21			
PCB congener 81	<3 µg/kg	TM168		<3 M			
PCB congener 77	<3 µg/kg	TM168		<3 M			
PCB congener 123	<3 µg/kg	TM168		<3 M			
PCB congener 114	<3 µg/kg	TM168		<3 M			
PCB congener 105	<3 µg/kg	TM168		<3 M			
PCB congener 126	<3 µg/kg	TM168		<3 M			
PCB congener 167	<3 µg/kg	TM168		<3 M			
PCB congener 156	<3 µg/kg	TM168		<3 M			
PCB congener 157	<3 µg/kg	TM168		<3 M			
PCB congener 169	<3 µg/kg	TM168		<3 M			
PCB congener 189	<3 µg/kg	TM168		<3 M			
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168		<36			
Sulphide, Easily liberated	<15 mg/kg	TM180		<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181		16.3	3.65		
Arsenic	<0.6 mg/kg	TM181		15.4 M	2.88 M		
Boron	<0.7 mg/kg	TM181		12.5 #	2.37 #		
Cadmium	<0.02 mg/kg	TM181		0.293 M	0.0618 M		
Chromium	<0.9 mg/kg	TM181		16.3 M	3.65 M		
Copper	<1.4 mg/kg	TM181		19.3 M	6.12 M		
Iron	<1000 mg/kg	TM181		26400 #	9000 #		
Lead	<0.7 mg/kg	TM181		71.9 M	6.8 M		
Mercury	<0.1 mg/kg	TM181		<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181		23.1 M	6.47 M		
Selenium	<1 mg/kg	TM181		<1 #	<1 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Results Legend		Customer Sample Ref.	MS-BH23 ADS4220930002 0.10 - 0.10 Soil/Solid (S) 30/09/2022 13:46 12/10/2022 221013-36 27008725 ES2	MS-BH23 ADS4220930004 0.40 - 0.40 Soil/Solid (S) 30/09/2022 13:51 12/10/2022 221013-36 27008733 ES4	MS-BH23 ADS4220930012 1.20 - 1.20 Soil/Solid (S) 30/09/2022 13:59 12/10/2022 221013-36 27008718 ES10			
Component	LOD/Units	Method						
Zinc	<1.9 mg/kg	TM181		92.6	19.4			
				M	M			
Sulphate, Total	<48 mg/kg	TM221		330	448			
				M	M			
Total Sulphur (ASB)	<0.0016 %	TM221		0.011	0.0149			
Nitrite as NO ₂ , 2:1 water soluble	<0.1 mg/kg	TM243		0.38	0.14			
Water Soluble Sulphate as SO ₄ 2:1 Extract	<0.004 g/l	TM243		0.0051	0.216			
				M	M			
Nitrate as NO ₃ , 2:1 water soluble	<1 mg/kg	TM243		3.3	<1			
EPH (C5-C40)	<35 mg/kg	TM415		<35	<35			
EPH Surrogate % recovery**	%	TM415		101	102			
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415		<35	<35			
				M	M			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	MS-BH23 ADS4220930004 0.40 - 0.40 Soil/Solid (S) 30/09/2022 13:51 12/10/2022 221013-36 27008733 ES4	MS-BH23 ADS4220930012 1.20 - 1.20 Soil/Solid (S) 30/09/2022 13:59 12/10/2022 221013-36 27008718 ES10			
# ISO17025 accredited.							
M mCERTS accredited.		Depth (m)	0.40 - 0.40	1.20 - 1.20			
aq Aqueous / settled sample.		Sample Type	30/09/2022	30/09/2022			
diss.filt Dissolved / filtered sample.		Date Sampled	13:51	13:59			
tot.unfilt Total / unfiltered sample.		Sample Time	12/10/2022	12/10/2022			
* Subcontracted - refer to subcontractor report for accreditation status.		Date Received	221013-36	221013-36			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		SDG Ref	27008733	27008718			
(F) Trigger breach confirmed		Lab Sample No.(s)	ES4	ES10			
1-4*#@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20 @	<20 @			



CERTIFICATE OF ANALYSIS

Validated

 SDG: 221013-36
 Client Ref.: F212561

 Report Number: 666591
 Location: Keadby 3

Superseded Report: 666550

OC OP Pesticides and Triazine Herb

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$ Sample deviation (see appendix)		Customer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	MS-BH23 ADS4220930002 0.10 - 0.10 Soil/Solid (S) 30/09/2022 13:46 12/10/2022 221013-36 27008725 ES2					
Component	LOD/Units	Method						
Dichlorvos	<50 µg/kg	TM073	<50					
Mevinphos	<50 µg/kg	TM073	<50					
Phorate	<50 µg/kg	TM073	<50					
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50					
Diazinon	<50 µg/kg	TM073	<50					
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50					
Disulfoton	<50 µg/kg	TM073	<50					
Heptachlor	<50 µg/kg	TM073	<50					
Aldrin	<50 µg/kg	TM073	<50					
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50					
Methyl parathion	<50 µg/kg	TM073	<50					
Malathion	<50 µg/kg	TM073	<50					
Fenitrothion	<50 µg/kg	TM073	<50					
Heptachlor epoxide	<50 µg/kg	TM073	<50					
Parathion	<50 µg/kg	TM073	<50					
Endosulphan I	<50 µg/kg	TM073	<50					
p,p-DDE	<50 µg/kg	TM073	<50					
Dieldrin	<50 µg/kg	TM073	<50					
Endrin	<50 µg/kg	TM073	<50					
p,p-TDE (DDD)	<50 µg/kg	TM073	<50					
Ethion	<50 µg/kg	TM073	<50					
Endosulphan II	<50 µg/kg	TM073	<50					
p,p-DDT	<50 µg/kg	TM073	<50					
p,p-Methoxychlor	<50 µg/kg	TM073	<50					
Endosulphan sulphate	<50 µg/kg	TM073	<50					
Azinphos-methyl	<50 µg/kg	TM073	<50					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH23	MS-BH23			
#	ISO17025 accredited.		ADS4220930004	ADS4220930012			
M	mCERTS accredited.		0.40 - 0.40	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	30/09/2022	30/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:51	13:59			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-36	221013-36			
(F)	Trigger breach confirmed	SDG Ref	27008733	27008718			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES4	ES10			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	86	83			
Acenaphthene-d10 % recovery**	%	TM218	88.6	87.7			
Phenanthrene-d10 % recovery**	%	TM218	90.8	89.7			
Chrysene-d12 % recovery**	%	TM218	85.2	85.6			
Perylene-d12 % recovery**	%	TM218	82.4	79.6			
Naphthalene	<9 µg/kg	TM218	28.6	<9			
			M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	@ M			
Phenanthrene	<15 µg/kg	TM218	73.6	<15			
			M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	@ M			
Fluoranthene	<17 µg/kg	TM218	89	<17			
			M	@ M			
Pyrene	<15 µg/kg	TM218	79.7	<15			
			M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	38.5	<14			
			M	@ M			
Chrysene	<10 µg/kg	TM218	53.9	<10			
			M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	67.1	<15			
			M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	17.2	<14			
			M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	34.5	<15			
			M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	33.8	<18			
			M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	35.1	<24			
			M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	551	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
 Client Ref.: F212561

Report Number: 666591
 Location: Keadby 3

Superseded Report: 666550

VOC MS (S)

Results Legend		Customer Sample Ref.		MS-BH23	MS-BH23				
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		ADS4220930004	ADS4220930012				
M mCERTS accredited.			0.40 - 0.40	0.40 - 0.40					
AQ Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)					
diss.filter Dissolved / filtered sample.			30/09/2022	30/09/2022					
tot.unfilt Total / unfiltered sample.			13:51	13:59					
** Subcontracted - refer to subcontractor report for accreditation status.			12/10/2022	12/10/2022					
* % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				221013-36	221013-36				
(F) Trigger breach confirmed				27008733	27008718				
1-4* @ Sample deviation (see appendix)				ES4	ES10				
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM116	108		118	@	@		
Toluene-d8**	%	TM116	103	@	98.7	@	@		
4-Bromofluorobenzene**	%	TM116	100	@	89.9	@	@		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M	<10	@ M	@ M		
Benzene	<9 µg/kg	TM116	<180	@ M	<9	@ M	@ M		
Toluene	<7 µg/kg	TM116	<140	@ M	<7	@ M	@ M		
Ethylbenzene	<4 µg/kg	TM116	<80	@ M	<4	@ M	@ M		
p/m-Xylene	<10 µg/kg	TM116	<200	@ #	<10	@ #	@ #		
o-Xylene	<10 µg/kg	TM116	<200	@ M	<10	@ M	@ M		
Sum of BTEX	<40 µg/kg	TM116	<800	@	<40	@	@		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH23ES10 1.20 - 1.20 SOLID 30/09/2022 00:00:00 12/10/2022 05:00:00 221013-36 27008718 TM048	22/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-36
Client Ref.: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Test Completion Dates

Lab Sample No(s)	27008718	27008725	27008733
Customer Sample Ref.	MS-BH23	MS-BH23	MS-BH23
AGS Ref.	ES10	ES2	ES4
Depth	1.20 - 1.20	0.10 - 0.10	0.40 - 0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

	27008718	27008725	27008733
Acid herbicides*		31-Oct-2022	
Ammonium Soil by Titration	18-Oct-2022		18-Oct-2022
Anions by Kone (soil)	20-Oct-2022		20-Oct-2022
Asbestos ID in Solid Samples	22-Oct-2022		
Chromium III	20-Oct-2022		20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022		18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022		19-Oct-2022
Elemental Sulphur	20-Oct-2022		24-Oct-2022
EPH	21-Oct-2022		21-Oct-2022
EPH by GCxGC-FID	17-Oct-2022		17-Oct-2022
GRO by GC-FID (S)	21-Oct-2022		21-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022		19-Oct-2022
Metals in solid samples by OES	19-Oct-2022		19-Oct-2022
NO3, NO2 and TON by KONE (s)	17-Oct-2022		20-Oct-2022
OC OP Pesticides and Triazine Herb		31-Oct-2022	
PAH by GCMS	19-Oct-2022		17-Oct-2022
PCBs by GCMS			18-Oct-2022
pH	21-Oct-2022		18-Oct-2022
Phenols by HPLC (S)	17-Oct-2022		19-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022		20-Oct-2022
Total Sulphate	18-Oct-2022		18-Oct-2022
VOC MS (S)	21-Oct-2022		24-Oct-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR22A8178	Issue Date	: 31-Oct-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 221013-36	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 18-Oct-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 24-Oct-2022 - 31-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Signatories

Lubomír Pokorný



Position

Country Manager

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: **SOLID**

Client sample ID

27011955
MS-BH23

Laboratory sample ID
Client sampling date / time

PR22A8178001

13-Oct-2022 11:24

Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	86.3	± 6.0%	----	----	----	----
Pesticides									
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.



CERTIFICATE OF ANALYSIS

SDG: 221013-36
Client Ref: F212561

Report Number: 666591
Location: Keadby 3

Superseded Report: 666550

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-41
Your Reference: F212561
Location: Keadby 3
Report No: 665685
Order Number: 386/121917/CP

We received 4 samples on Thursday October 06, 2022 and 1 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

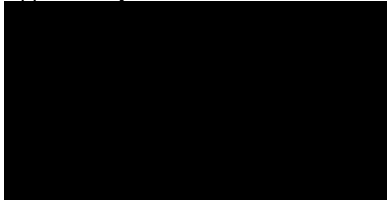
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27009128	DS108	ES2	0.10 - 0.10	29/09/2022
27009139	DS108	ES4	0.40 - 0.40	29/09/2022
27009152	DS108	ES6	0.70 - 0.70	29/09/2022
27009162	DS108	ES7	1.20 - 1.20	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> <p>Sample Types -</p> <ul style="list-style-type: none"> S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other 	Lab Sample No(s)	27009139		
	Customer Sample Reference	DS108		
	AGS Reference	ES4		
	Depth (m)	0.40 - 0.40		
	Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type	S	S	

Analyte	All	NDPs: 0 Tests: 1			
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Results Legend					
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		27009139		
	Customer Sample Reference		DS108		
	AGS Reference		ES4		
	Depth (m)		0.40 - 0.40		
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type		S	S	
Sample description	All	NDPs: 0 Tests: 1	X		
Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
Total Sulphate	All	NDPs: 0 Tests: 1	X		
VOC MS (S)	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27009139	DS108	0.40 - 0.40	Grey	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS108 ADS1220929012 0.40 - 0.40 Soil/Solid (S) 29/09/2022 15:12 06/10/2022 221013-41 27009139 ES4					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	18				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	19.7	#			
pH	1 pH Units	TM133	8.26	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	@ M			
Cyanide, Free	<1 mg/kg	TM153	<1	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	29.9				
Arsenic	<0.6 mg/kg	TM181	87.8	M			
Boron	<0.7 mg/kg	TM181	22.6	#			
Cadmium	<0.02 mg/kg	TM181	0.282	M			
Chromium	<0.9 mg/kg	TM181	29.9	M			
Copper	<1.4 mg/kg	TM181	83.5	M			
Iron	<1000 mg/kg	TM181	28900	#			
Lead	<0.7 mg/kg	TM181	47.4	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	52.6	M			
Selenium	<1 mg/kg	TM181	1.7	#			
Zinc	<1.9 mg/kg	TM181	52.4	M			
Sulphate, Total	<48 mg/kg	TM221	214	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.00715				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0201	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.15				
EPH (C5-C40)	<35 mg/kg	TM415	39				
EPH Surrogate % recovery**	%	TM415	105				



CERTIFICATE OF ANALYSIS

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.						
# ISO17025 accredited.		DS108						
M mCERTS accredited.		ADS1220929012						
sq Aqueous / settled sample.		0.40 - 0.40						
dis.filt Dissolved / filtered sample.		Soil/Solid (S)						
tot.unfilt Total / unfiltered sample.		29/09/2022						
* Subcontracted - refer to subcontractor report for accreditation status.		15:12						
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		06/10/2022						
(F) Trigger breach confirmed		221013-41						
1-4*§@ Sample deviation (see appendix)		SDG Ref 27009139						
		Lab Sample No.(s) ES4						
		AGS Reference						
Component	LOD/Units	Method						
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	39	@ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS108				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	ADS1220929012				
M	mCERTS accredited.		0.40 - 0.40				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		29/09/2022				
tot.unfilt	Total / unfiltered sample.		15:12				
*	Subcontracted - refer to subcontractor report for accreditation status.		06/10/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221013-41				
(F)	Trigger breach confirmed		27009139				
1-4*\$@	Sample deviation (see appendix)		ES4				
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	70				
Acenaphthene-d10 % recovery**	%	TM218	77.6				
Phenanthrene-d10 % recovery**	%	TM218	51.3				
Chrysene-d12 % recovery**	%	TM218	14.7				
Perylene-d12 % recovery**	%	TM218	5.56				
Naphthalene	<9 µg/kg	TM218	11.2	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	18.5	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	DS108					
#	ISO17025 accredited.		ADS1220929012					
M	mCERTS accredited.		0.40 - 0.40					
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)					
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022					
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:12					
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	06/10/2022					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-41					
	(F) Trigger breach confirmed	SDG Ref	27009139					
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES4					
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	112	@				
Toluene-d8**	%	TM116	102	@				
4-Bromofluorobenzene**	%	TM116	84.6	@				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M				
Benzene	<9 µg/kg	TM116	<180	@ M				
Toluene	<7 µg/kg	TM116	<140	@ M				
Ethylbenzene	<4 µg/kg	TM116	<80	@ M				
p/m-Xylene	<10 µg/kg	TM116	<200	@ #				
o-Xylene	<10 µg/kg	TM116	<200	@ M				
Sum of BTEX	<40 µg/kg	TM116	<800	@				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-41
Client Ref.: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27009139
Customer Sample Ref.	DS108
AGS Ref.	ES4
Depth	0.40 - 0.40
Type	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Chromium III	19-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022
Elemental Sulphur	24-Oct-2022
EPH	20-Oct-2022
EPH by GCxGC-FID	17-Oct-2022
GRO by GC-FID (S)	20-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022
PAH by GCMS	21-Oct-2022
pH	18-Oct-2022
Phenols by HPLC (S)	19-Oct-2022
Sample description	13-Oct-2022
Total Organic Carbon	20-Oct-2022
Total Sulphate	18-Oct-2022
VOC MS (S)	21-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-41
Client Ref: F212561

Report Number: 665685
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park
 Manor Road (off Manor Lane)
 Hawarden
 Deeside
 CH5 3US

[Redacted] lsglobal.com
 Website: www.alsenvironmental.co.uk

Fugro GeoServices Ltd - Keadby
 Fugro House
 Hithercroft Road
 Wallingford
 Oxfordshire
 OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 09 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-42
Your Reference: F212561
Location: Keadby 3
Report No: 667816
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665750 in its entirety.

We received 4 samples on Thursday October 06, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

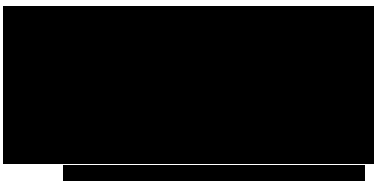
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27009223	DS106	ES9	1.50 - 2.00	28/09/2022
27009187	DS106	ES10	2.50 - 3.00	28/09/2022
27009200	DS106	ES11	3.50 - 4.00	28/09/2022
27009212	DS106	ES12	4.50 - 5.00	28/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Results Legend	Lab Sample No(s)		27009187		27009212	
	Customer Sample Reference		DS106		DS106	
AGS Reference		ES10		ES12		
Depth (m)		2.50 - 3.00		4.50 - 5.00		
Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
Sample Type		S	S	S	S	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1		X		
Chromium III	All	NDPs: 0 Tests: 2	X		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X	
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X	
EPH	All	NDPs: 0 Tests: 2	X		X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X	
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X	
pH	All	NDPs: 0 Tests: 2	X		X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Results Legend	Lab Sample No(s)	27009187	27009212	27009187	27009212	
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Customer Sample Reference	DS106	DS106	DS106	DS106	
	AGS Reference	ES10	ES12	ES10	ES12	
	Depth (m)	2.50 - 3.00	4.50 - 5.00	2.50 - 3.00	4.50 - 5.00	
	Container	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	S
	Phenols by HPLC (S)	All	NDPs: 0 Tests: 2		X	X
Sample description	All	NDPs: 0 Tests: 2		X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 2		X	X	
Total Sulphate	All	NDPs: 0 Tests: 2		X	X	
VOC MS (S)	All	NDPs: 0 Tests: 2		X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27009187	DS106	2.50 - 3.00	Dark Brown	Silty Sand	Stones	None
27009212	DS106	4.50 - 5.00	Dark Brown	Silty Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Results Legend		Customer Sample Ref.		DS106 F-PCANVB-8CH9 2.50 - 3.00 Soil/Solid (S) 28/09/2022 12:49 06/10/2022 221013-42 27009187 ES10	DS106 F-9DANVB-ROFY 4.50 - 5.00 Soil/Solid (S) 28/09/2022 13:10 06/10/2022 221013-42 27009212 ES12			
# ISO17025 accredited.		Depth (m)						
M mCERTS accredited.		Sample Type						
aq Aqueous / settled sample.		Date Sampled						
diss.filt Dissolved / filtered sample.		Sample Time						
tot.unfilt Total / unfiltered sample.		Date Received						
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref						
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)						
(F) Trigger breach confirmed		AGS Reference						
1-4*\$@Sample deviation (see appendix)								
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	20		22			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M	<0.035	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	22.8	#	22.1	#		
pH	1 pH Units	TM133	8.51	M	8.7	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	@ M		
Cyanide, Free	<1 mg/kg	TM153	<1	M	<1	@ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	M	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	32.4		27.4			
Arsenic	<0.6 mg/kg	TM181	89.9	M	87	M		
Boron	<0.7 mg/kg	TM181	33.9	#	33.6	#		
Cadmium	<0.02 mg/kg	TM181	0.244	M	0.222	M		
Chromium	<0.9 mg/kg	TM181	32.4	M	27.4	M		
Copper	<1.4 mg/kg	TM181	83.3	M	77.9	M		
Iron	<1000 mg/kg	TM181	34600	#	33200	#		
Lead	<0.7 mg/kg	TM181	47.7	M	38.7	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M	<0.1	M		
Nickel	<0.2 mg/kg	TM181	52.9	M	52.4	M		
Selenium	<1 mg/kg	TM181	2.84	#	2.42	#		
Zinc	<1.9 mg/kg	TM181	55.7	M	51.1	M		
Sulphate, Total	<48 mg/kg	TM221	298	M	342	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.00993		0.0114			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.1		0.21			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.029	M	0.0416	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	1.08		8.81			
EPH (C5-C40)	<35 mg/kg	TM415	85.3		<35			
EPH Surrogate % recovery**	%	TM415	106		107			



CERTIFICATE OF ANALYSIS

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Results Legend		Customer Sample Ref.	DS106	DS106			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filter Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*# @ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS106 F-PCANVB-8CH9 2.50 - 3.00 Soil/Solid (S) 28/09/2022 12:49 06/10/2022 221013-42 27009187 ES10	DS106 F-9DANVB-ROFY 4.50 - 5.00 Soil/Solid (S) 28/09/2022 13:10 06/10/2022 221013-42 27009212 ES12			
Component	LOD/Units	Method					
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	85.3	<35	M	@ M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

PAH by GCMS

Results Legend		Customer Sample Ref.	DS106	DS106			
#	ISO17025 accredited.		F-PCANVB-8CH9	F-9DANVB-ROFY			
M	mCERTS accredited.		2.50 - 3.00	4.50 - 5.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	28/09/2022	28/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:49	13:10			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	06/10/2022	06/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-42	221013-42			
(F)	Trigger breach confirmed	SDG Ref	27009187	27009212			
1-4*\$	@ Sample deviation (see appendix)	Lab Sample No.(s)	ES10	ES12			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	54.8	45.5			
Acenaphthene-d10 % recovery**	%	TM218	56.3	44			
Phenanthrene-d10 % recovery**	%	TM218	11.1	6.7			
Chrysene-d12 % recovery**	%	TM218	0.83	0.33			
Perylene-d12 % recovery**	%	TM218	0	0.11			
Naphthalene	<9 µg/kg	TM218	17	14.2			
			M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

VOC MS (S)

Component	LOD/Units	Method	DS106 F-PCANVB-8CH9 2.50 - 3.00 Soil/Solid (S) 28/09/2022 12:49 06/10/2022 221013-42 27009187 ES10	DS106 F-9DANVB-ROFY 4.50 - 5.00 Soil/Solid (S) 28/09/2022 13:10 06/10/2022 221013-42 27009212 ES12			
Dibromofluoromethane**	%	TM116	117	117	@		
Toluene-d8**	%	TM116	96.7	97.1	@		
4-Bromofluorobenzene**	%	TM116	74.4	78.2	@		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	<200	@ M		
Benzene	<9 µg/kg	TM116	<180	<180	@ M		
Toluene	<7 µg/kg	TM116	<140	<140	@ M		
Ethylbenzene	<4 µg/kg	TM116	<80	<80	@ M		
p/m-Xylene	<10 µg/kg	TM116	<200	<200	@ #		
o-Xylene	<10 µg/kg	TM116	<200	<200	@ M		
Sum of BTEX	<40 µg/kg	TM116	<800	<800	@		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5& Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS106ES12 4.50 - 5.00 SOLID 28/09/2022 00:00:00 06/10/2022 05:00:00 221013-42 27009212 TM048	24/10/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-42
Client Ref.: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Test Completion Dates

Lab Sample No(s)	27009187	27009212
Customer Sample Ref.	DS106	DS106
AGS Ref.	ES10	ES12
Depth	2.50 - 3.00	4.50 - 5.00
Type	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	18-Oct-2022	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Asbestos ID in Solid Samples		24-Oct-2022
Chromium III	20-Oct-2022	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022	18-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	20-Oct-2022
Elemental Sulphur	24-Oct-2022	24-Oct-2022
EPH	20-Oct-2022	20-Oct-2022
EPH by GCxGC-FID	17-Oct-2022	17-Oct-2022
GRO by GC-FID (S)	20-Oct-2022	20-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022	18-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022	17-Oct-2022
PAH by GCMS	20-Oct-2022	20-Oct-2022
pH	18-Oct-2022	21-Oct-2022
Phenols by HPLC (S)	17-Oct-2022	17-Oct-2022
Sample description	13-Oct-2022	13-Oct-2022
Total Organic Carbon	20-Oct-2022	20-Oct-2022
Total Sulphate	18-Oct-2022	18-Oct-2022
VOC MS (S)	21-Oct-2022	21-Oct-2022

ALS Environmental, Land	QF.7.5.1 Data Amendments Form (Issue No. 4)
	Date: 03/03/2020
	Issued and Authorised by Quality Manager

SDG	Sample Event	Sample ID	Date Amended	Amendment Reason	Previous Reference	New Reference	Supersedes Report
221013-42	27009187	DS106	09/11/2022	Sample Date Change	28/10/2022	28/09/2022	667427



CERTIFICATE OF ANALYSIS

SDG: 221013-42
Client Ref: F212561

Report Number: 667816
Location: Keadby 3

Superseded Report: 665750

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221013-44
Your Reference: F212561
Location: Keadby 3
Report No: 665686
Order Number: 386/121917/CP

This report has been revised and directly supersedes 665393 in its entirety.

We received 3 samples on Thursday October 06, 2022 and 1 of these samples were scheduled for analysis which was completed on Monday October 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

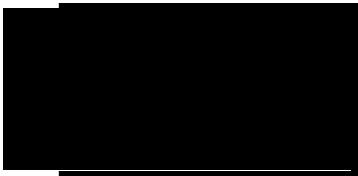
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27009307	DS107	ES9	1.50 - 2.00	27/09/2022
27009254	DS107	ES10	2.50 - 3.00	27/09/2022
27009280	DS107	ES11	3.50 - 4.00	27/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27009254	DS107	ES10	2.50 - 3.00	250g Amber Jar (ALE210) 60g VOC (ALE215)	S S
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
	Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
	Chromium III	All	NDPs: 0 Tests: 1	X		
	Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
	Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1		X		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Results Legend					
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		27009254		
	Customer Sample Reference		DS107		
	AGS Reference		ES10		
	Depth (m)		2.50 - 3.00		
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type		S	S	
Sample description	All	NDPs: 0 Tests: 1	X		
Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
Total Sulphate	All	NDPs: 0 Tests: 1	X		
VOC MS (S)	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

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SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27009254	DS107	2.50 - 3.00	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Results Legend		Customer Sample Ref.	DS107			
# ISO17025 accredited.			F-Z48LVB-SCL4			
M mCERTS accredited.			2.50 - 3.00			
aq Aqueous / settled sample.			Soil/Solid (S)			
diss.filt Dissolved / filtered sample.			27/09/2022			
tot.unfilt Total / unfiltered sample.			15:15			
* Subcontracted - refer to subcontractor report for accreditation status.		Depth (m)	06/10/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Sample Type	221013-44			
(F) Trigger breach confirmed		Date Sampled	27009254			
1-4*\$@ Sample deviation (see appendix)		Sample Time	ES10			
		Date Received				
		SDG Ref				
		Lab Sample No.(s)				
		AGS Reference				
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	20			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	16.5	#		
pH	1 pH Units	TM133	8.57	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	@ M		
Cyanide, Free	<1 mg/kg	TM153	<1	@ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	39.4			
Arsenic	<0.6 mg/kg	TM181	101	M		
Boron	<0.7 mg/kg	TM181	35.4	#		
Cadmium	<0.02 mg/kg	TM181	0.306	M		
Chromium	<0.9 mg/kg	TM181	39.4	M		
Copper	<1.4 mg/kg	TM181	89	M		
Iron	<1000 mg/kg	TM181	25900	#		
Lead	<0.7 mg/kg	TM181	50.1	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	46.8	M		
Selenium	<1 mg/kg	TM181	3.06	#		
Zinc	<1.9 mg/kg	TM181	59.2	M		
Sulphate, Total	<48 mg/kg	TM221	311	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0104			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	<0.1			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0262	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	8.08			
EPH (C5-C40)	<35 mg/kg	TM415	<35			
EPH Surrogate % recovery**	%	TM415	105			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

PAH by GCMS

Results Legend		Customer Sample Ref.		DS107					
#	ISO17025 accredited.				F-Z48LVB-SCL4				
M	mCERTS accredited.				2.50 - 3.00				
aq	Aqueous / settled sample.				Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.				27/09/2022				
tot.unfilt	Total / unfiltered sample.				15:15				
	* Subcontracted - refer to subcontractor report for accreditation status.				06/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				221013-44				
	(F) Trigger breach confirmed				27009254				
	1-4*\$@ Sample deviation (see appendix)				ES10				
Component	LOD/Units	Method							
Naphthalene-d8 % recovery**	%	TM218	65.5						
Acenaphthene-d10 % recovery**	%	TM218	61.9						
Phenanthrene-d10 % recovery**	%	TM218	32.9						
Chrysene-d12 % recovery**	%	TM218	11.6						
Perylene-d12 % recovery**	%	TM218	4.83						
Naphthalene	<9 µg/kg	TM218	<9	@ M					
Acenaphthylene	<12 µg/kg	TM218	<12	@ M					
Acenaphthene	<8 µg/kg	TM218	<8	@ M					
Fluorene	<10 µg/kg	TM218	<10	@ M					
Phenanthrene	<15 µg/kg	TM218	<15	@ M					
Anthracene	<16 µg/kg	TM218	<16	@ M					
Fluoranthene	<17 µg/kg	TM218	<17	@ M					
Pyrene	<15 µg/kg	TM218	<15	@ M					
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M					
Chrysene	<10 µg/kg	TM218	12.8	@ M					
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M					
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M					
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M					
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M					
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M					
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M					
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118						



CERTIFICATE OF ANALYSIS

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

VOC MS (S)

Results Legend		Customer Sample Ref.	DS107				
#	ISO17025 accredited.		F-Z48LVB-SCL4				
M	mCERTS accredited.	Depth (m)	2.50 - 3.00				
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)				
diss.flit	Dissolved / filtered sample.	Date Sampled	27/09/2022				
tot.unflit	Total / unfiltered sample.	Date Received	15:15				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	06/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221013-44				
	(F) Trigger breach confirmed	SDG Ref	27009254				
	1-4*\$@ Sample deviation (see appendix)	Lab Sample No.(s)	ES10				
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	116	@			
Toluene-d8**	%	TM116	97.7	@			
4-Bromofluorobenzene**	%	TM116	78.6	@			
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M			
Benzene	<9 µg/kg	TM116	<180	@ M			
Toluene	<7 µg/kg	TM116	<140	@ M			
Ethylbenzene	<4 µg/kg	TM116	<80	@ M			
p/m-Xylene	<10 µg/kg	TM116	<200	@ #			
o-Xylene	<10 µg/kg	TM116	<200	@ M			
Sum of BTEX	<40 µg/kg	TM116	<800	@			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221013-44
Client Ref.: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Test Completion Dates

Lab Sample No(s)	27009254
Customer Sample Ref.	DS107
AGS Ref.	ES10
Depth	2.50 - 3.00
Type	Soil/Solid (S)

Ammonium Soil by Titration	18-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Chromium III	20-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	18-Oct-2022
Easily Liberated Sulphide	19-Oct-2022
Elemental Sulphur	24-Oct-2022
EPH	20-Oct-2022
EPH by GCxGC-FID	17-Oct-2022
GRO by GC-FID (S)	20-Oct-2022
Hexavalent Chromium (s)	19-Oct-2022
Metals in solid samples by OES	19-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022
PAH by GCMS	20-Oct-2022
pH	14-Oct-2022
Phenols by HPLC (S)	19-Oct-2022
Sample description	13-Oct-2022
Total Organic Carbon	20-Oct-2022
Total Sulphate	18-Oct-2022
VOC MS (S)	21-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221013-44
Client Ref: F212561

Report Number: 665686
Location: Keadby 3

Superseded Report: 665393

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221018-40
Your Reference:	F212561
Location:	Keadby 3
Report No:	666071
Order Number:	386/121917/CP

We received 4 samples on Thursday October 13, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday October 26, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

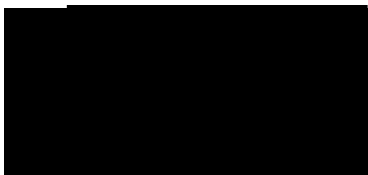
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27032716	DS107	ES1	0.10 - 0.10	27/09/2022
27032723	DS107	ES4	0.40 - 0.40	27/09/2022
27032730	DS107	ES8	0.80 - 0.80	27/09/2022
27032737	DS107	ES9	1.20 - 1.20	27/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)				
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Customer Sample Reference	DS107	27032730		
	AGS Reference	ES8			
	Depth (m)	0.80 - 0.80			
	Container	250g Amber Jar (ALE210)	60g VOC (ALE215)		
	Sample Type	S	S		
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
Chromium III	All	NDPs: 0 Tests: 1	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X		
Elemental Sulphur	All	NDPs: 0 Tests: 1	X		
EPH	All	NDPs: 0 Tests: 1	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X		
PAH by GCMS	All	NDPs: 0 Tests: 1	X		
pH	All	NDPs: 0 Tests: 1	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Results Legend					
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	Lab Sample No(s)		27032730		
	Customer Sample Reference		DS107		
	AGS Reference		ES8		
	Depth (m)		0.80 - 0.80		
	Container		250g Amber Jar (ALE210)	60g VOC (ALE215)	
	Sample Type		S	S	
Sample description	All	NDPs: 0 Tests: 1	X		
Total Organic Carbon	All	NDPs: 0 Tests: 1	X		
Total Sulphate	All	NDPs: 0 Tests: 1	X		
VOC MS (S)	All	NDPs: 0 Tests: 1		X	



CERTIFICATE OF ANALYSIS

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SDG: 221018-40
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Report Number: 666071
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27032730	DS107	0.80 - 0.80	Grey	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	DS107 ADS1221006008 0.80 - 0.80 Soil/Solid (S) 27/09/2022 14:30 13/10/2022 221018-40 27032730 ES8					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	14				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	@ M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	@ M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M			
Soil Organic Matter (SOM)	<0.35 %	TM132	12.2	#			
pH	1 pH Units	TM133	8.5	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	@ M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M			
Cyanide, Total	<1 mg/kg	TM153	<1	@ M			
Cyanide, Free	<1 mg/kg	TM153	<1	@ M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	28.7				
Arsenic	<0.6 mg/kg	TM181	82.2	M			
Boron	<0.7 mg/kg	TM181	23.1	#			
Cadmium	<0.02 mg/kg	TM181	0.118	M			
Chromium	<0.9 mg/kg	TM181	28.7	M			
Copper	<1.4 mg/kg	TM181	74.5	M			
Iron	<1000 mg/kg	TM181	26700	#			
Lead	<0.7 mg/kg	TM181	38.4	M			
Mercury	<0.1 mg/kg	TM181	<0.1	M			
Nickel	<0.2 mg/kg	TM181	40	M			
Selenium	<1 mg/kg	TM181	1.36	#			
Zinc	<1.9 mg/kg	TM181	45.5	M			
Sulphate, Total	<48 mg/kg	TM221	129	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.0043				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.16				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0169	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	3.56				
EPH (C5-C40)	<35 mg/kg	TM415	<35				
EPH Surrogate % recovery**	%	TM415	103				



CERTIFICATE OF ANALYSIS

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.								
<p># ISO17025 accredited. M mCERTS accredited. aq. Aqueous / settled sample. dis. filt. Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)</p>		DS107 ADS1221006008 0.80 - 0.80 Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference								
Component	LOD/Units	Method								
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	@ M						



CERTIFICATE OF ANALYSIS

SDG: 221018-40
 Client Ref.: F212561

Report Number: 666071
 Location: Keadby 3

Superseded Report:

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.					
#	ISO17025 accredited.	DS107 ADS1221006008 0.80 - 0.80 Soil/Solid (S) 27/09/2022 14:30 13/10/2022 221018-40 27032730 ES8					
M	mCERTS accredited.		Depth (m)				
aq	Aqueous / settled sample.		Sample Type				
diss.fltr	Dissolved / filtered sample.		Date Sampled				
tot.unfltr	Total / unfiltered sample.		Sample Time				
*	Subcontracted - refer to subcontractor report for accreditation status.		Date Received				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.		SDG Ref				
(F)	Trigger breach confirmed	Lab Sample No.(s)					
1-4*#	Sample deviation (see appendix)	AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20				
			4 @				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS107				
#	ISO17025 accredited.		ADS1221006008				
M	mCERTS accredited.		0.80 - 0.80				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:30				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	13/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-40				
(F)	Trigger breach confirmed	SDG Ref	27032730				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES8				
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	52.1				
Acenaphthene-d10 % recovery**	%	TM218	53.1				
Phenanthrene-d10 % recovery**	%	TM218	32.1				
Chrysene-d12 % recovery**	%	TM218	16.7				
Perylene-d12 % recovery**	%	TM218	9.6				
Naphthalene	<9 µg/kg	TM218	<9	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
 Client Ref.: F212561

Report Number: 666071
 Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.		DS107					
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)				ADS1221006008 0.80 - 0.80 Soil/Solid (S)					
		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		27/09/2022 14:30 13/10/2022 221018-40 27032730 ES8					
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM116	110	@					
Toluene-d8**	%	TM116	101	@					
4-Bromofluorobenzene**	%	TM116	83.8	@					
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200	@ M					
Benzene	<9 µg/kg	TM116	<180	@ M					
Toluene	<7 µg/kg	TM116	<140	@ M					
Ethylbenzene	<4 µg/kg	TM116	<80	@ M					
p/m-Xylene	<10 µg/kg	TM116	<200	@ #					
o-Xylene	<10 µg/kg	TM116	<200	@ M					
Sum of BTEX	<40 µg/kg	TM116	<800	@					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-40
Client Ref.: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27032730
Customer Sample Ref.	DS107
AGS Ref.	ES8
Depth	0.80 - 0.80
Type	Soil/Solid (S)

Ammonium Soil by Titration	25-Oct-2022
Anions by Kone (soil)	20-Oct-2022
Chromium III	21-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2022
Easily Liberated Sulphide	24-Oct-2022
Elemental Sulphur	26-Oct-2022
EPH	26-Oct-2022
EPH by GCxGC-FID	20-Oct-2022
GRO by GC-FID (S)	26-Oct-2022
Hexavalent Chromium (s)	20-Oct-2022
Metals in solid samples by OES	21-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022
PAH by GCMS	24-Oct-2022
pH	19-Oct-2022
Phenols by HPLC (S)	21-Oct-2022
Sample description	18-Oct-2022
Total Organic Carbon	24-Oct-2022
Total Sulphate	20-Oct-2022
VOC MS (S)	25-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221018-40
Client Ref: F212561

Report Number: 666071
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	27 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221018-41
Your Reference:	F212561
Location:	Keadby 3
Report No:	666309
Order Number:	386/121917/CP

We received 13 samples on Thursday October 13, 2022 and 1 of these samples were scheduled for analysis which was completed on Thursday October 27, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27032745	BH104	ES1	0.10 - 0.10	06/10/2022
27032787	BH104	ES4	0.50 - 0.50	06/10/2022
27032794	BH104	ES5	1.00 - 1.00	06/10/2022
27032801	BH104	ES6	1.20 - 1.20	06/10/2022
27032780	BH104	ES10	1.90 - 1.90	06/10/2022
27032808	DS103	ES10	1.50 - 2.00	29/09/2022
27032815	DS103	ES11	2.50 - 3.00	29/09/2022
27032822	DS103	ES12	3.50 - 4.00	29/09/2022
27032829	DS103	ES13	4.50 - 5.00	29/09/2022
27032752	DS109	ES11	3.50 - 4.00	29/09/2022
27032759	DS109	ES12	4.50 - 5.00	29/09/2022
27032766	DS110	ES11	3.50 - 4.00	29/09/2022
27032773	DS111	ES10	2.50 - 3.00	29/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27032822	DS103	ES12	3.50 - 4.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
	Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X		
	Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X		
	Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X		
	Chromium III	All	NDPs: 0 Tests: 1	X		
	Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27032822	DS103	ES12	3.50 - 4.00	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1		X		
Sample description	All	NDPs: 0 Tests: 1		X		
Total Organic Carbon	All	NDPs: 0 Tests: 1		X		
Total Sulphate	All	NDPs: 0 Tests: 1		X		
VOC MS (S)	All	NDPs: 0 Tests: 1				X



CERTIFICATE OF ANALYSIS

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SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27032822	DS103	3.50 - 4.00	Grey	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DS103			
#	ISO17025 accredited.		F-X8F0WB-P22H			
M	mCERTS accredited.		3.50 - 4.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:27			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	13/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-41			
(F)	Trigger breach confirmed	SDG Ref	27032822			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES12			
		AGS Reference				
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	22			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	@ M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	@ M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	@ M		
Soil Organic Matter (SOM)	<0.35 %	TM132	9.5	#		
pH	1 pH Units	TM133	8.19	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	@ M		
Cyanide, Free	<1 mg/kg	TM153	<1	@ M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	43.9			
Arsenic	<0.6 mg/kg	TM181	121	M		
Boron	<0.7 mg/kg	TM181	36	#		
Cadmium	<0.02 mg/kg	TM181	0.642	M		
Chromium	<0.9 mg/kg	TM181	43.9	M		
Copper	<1.4 mg/kg	TM181	103	M		
Iron	<1000 mg/kg	TM181	32200	#		
Lead	<0.7 mg/kg	TM181	65.2	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	59.7	M		
Selenium	<1 mg/kg	TM181	1.85	#		
Zinc	<1.9 mg/kg	TM181	69.7	M		
Sulphate, Total	<48 mg/kg	TM221	98.8	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.00329			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.12			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0388	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	18.2			
EPH (C5-C40)	<35 mg/kg	TM415	233			
EPH Surrogate % recovery**	%	TM415	99.3			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Results Legend			Customer Sample Ref.					
#	ISO17025 accredited.		Customer Sample Ref.	DS103				
M	mCERTS accredited.			F-X8F0WB-P22H				
sq	Aqueous / settled sample.		Depth (m)	3.50 - 4.00				
dis.fil	Dissolved / filtered sample.		Sample Type	Soil/Solid (S)				
tot.unfilt	Total / unfiltered sample.		Date Sampled	29/09/2022				
*	Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	13:27				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.		Date Received	22/10/2022				
(F)	Trigger breach confirmed		SDG Ref	27032822				
1-4*§@	Sample deviation (see appendix)		Lab Sample No.(s)	ES12				
			AGS Reference					
Component	LOD/Units	Method						
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	233	@ M				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	DS103				
# ISO17025 accredited.			F-X8F0WB-P22H				
M mCERTS accredited.			3.50 - 4.00				
aq Aqueous / settled sample.		Depth (m)	Soil/Solid (S)				
diss.filt Dissolved / filtered sample.		Sample Type	29/09/2022				
tot.unfilt Total / unfiltered sample.		Date Sampled	13:27				
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	13/10/2022				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221018-41				
(F) Trigger breach confirmed		SDG Ref	27032822				
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)	ES12				
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	4 @			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS103				
#	ISO17025 accredited.		F-X8F0WB-P22H				
M	mCERTS accredited.		3.50 - 4.00				
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/09/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:27				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	13/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-41				
(F)	Trigger breach confirmed	SDG Ref	27032822				
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES12				
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	54.1				
Acenaphthene-d10 % recovery**	%	TM218	57.9				
Phenanthrene-d10 % recovery**	%	TM218	36.8				
Chrysene-d12 % recovery**	%	TM218	17.5				
Perylene-d12 % recovery**	%	TM218	9.22				
Naphthalene	<9 µg/kg	TM218	13.4	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	@ M			
Fluorene	<10 µg/kg	TM218	<10	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	@ M			
Anthracene	<16 µg/kg	TM218	<16	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	@ M			
Pyrene	<15 µg/kg	TM218	<15	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	@ M			
Chrysene	<10 µg/kg	TM218	<10	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

VOC MS (S)

Component	LOD/Units	Method	Results	
Dibromofluoromethane**	%	TM116	109 @	
Toluene-d8**	%	TM116	99.5 @	
4-Bromofluorobenzene**	%	TM116	85.5 @	
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 @ M	
Benzene	<9 µg/kg	TM116	<180 @ M	
Toluene	<7 µg/kg	TM116	<140 @ M	
Ethylbenzene	<4 µg/kg	TM116	<80 @ M	
p/m-Xylene	<10 µg/kg	TM116	<200 @ #	
o-Xylene	<10 µg/kg	TM116	<200 @ M	
Sum of BTEX	<40 µg/kg	TM116	<800 @	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
27/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	DS103ES12
Depth (m)	3.50 - 4.00
Sample Type	SOLID
Date Sampled	29/09/2022 00:00:00
Date Received	13/10/2022 05:00:00
SDG	221018-41
Original Sample	27032822
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-41
Client Ref.: F212561

Report Number: 666309
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27032822
Customer Sample Ref.	DS103
AGS Ref.	ES12
Depth	3.50 - 4.00
Type	Soil/Solid (S)

Ammonium Soil by Titration	25-Oct-2022
Anions by Kone (soil)	24-Oct-2022
Asbestos ID in Solid Samples	27-Oct-2022
Chromium III	24-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2022
Easily Liberated Sulphide	24-Oct-2022
Elemental Sulphur	26-Oct-2022
EPH	26-Oct-2022
EPH by GCxGC-FID	20-Oct-2022
GRO by GC-FID (S)	26-Oct-2022
Hexavalent Chromium (s)	20-Oct-2022
Metals in solid samples by OES	24-Oct-2022
NO3, NO2 and TON by KONE (s)	24-Oct-2022
PAH by GCMS	24-Oct-2022
pH	24-Oct-2022
Phenols by HPLC (S)	21-Oct-2022
Sample description	18-Oct-2022
Total Organic Carbon	25-Oct-2022
Total Sulphate	24-Oct-2022
VOC MS (S)	25-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221018-41
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Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	27 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221018-44
Your Reference:	F212561
Location:	Keadby 3
Report No:	666231
Order Number:	386/121917/CP

We received 2 samples on Wednesday October 12, 2022 and 2 of these samples were scheduled for analysis which was completed on Thursday October 27, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

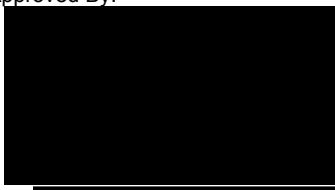
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27032847	MS-BH25	ES21	3.50 - 3.50	27/09/2022
27032854	MS-BH25	ES24	4.50 - 4.50	27/09/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27032847	MS-BH25	ES21	3.50 - 3.50	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
	27032854	MS-BH25	ES24	4.50 - 4.50	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X	X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X	X		
Chromium III	All	NDPs: 0 Tests: 2	X	X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X	X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X	X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X	X		
EPH	All	NDPs: 0 Tests: 2	X	X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X	X		
EPH CWG GC (S)	All	NDPs: 0 Tests: 1		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2	X	X		
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X	X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X	X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X	X		
pH	All	NDPs: 0 Tests: 2	X	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27032847	MS-BH25	ES21	3.50 - 3.50	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		MS-BH25	ES24	4.50 - 4.50	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
					60g VOC (ALE215)	S
						S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X	X		
Sample description	All	NDPs: 0 Tests: 2	X	X		
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1	X			
Total Organic Carbon	All	NDPs: 0 Tests: 2	X	X		
Total Sulphate	All	NDPs: 0 Tests: 2	X	X		
TPH CWG GC (S)	All	NDPs: 0 Tests: 1		X		
VOC MS (S)	All	NDPs: 0 Tests: 2	X	X		



CERTIFICATE OF ANALYSIS

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SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27032847	MS-BH25	3.50 - 3.50	Dark Brown	Loamy Sand	Stones	None
27032854	MS-BH25	4.50 - 4.50	Light Brown	Sandy Silt Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.		MS-BH25	MS-BH25			
#	ISO17025 accredited.			ADS4220927010	ADS4220927014			
M	mCERTS accredited.			3.50 - 3.50	4.50 - 4.50			
aq	Aqueous / settled sample.			Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.			27/09/2022	27/09/2022			
tot.unfilt	Total / unfiltered sample.			16:30	16:40			
	* Subcontracted - refer to subcontractor report for accreditation status.			12/10/2022	12/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221018-44	221018-44			
(F)	Trigger breach confirmed			27032847	27032854			
1-4*§	Sample deviation (see appendix)			ES21	ES24			
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	25	24				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 @ M	<15 @ M				
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 @ M	<12 @ M				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M				
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M				
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M				
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M				
Soil Organic Matter (SOM)	<0.35 %	TM132	0.634 #	0.64 @ #				
pH	1 pH Units	TM133	8.9 M	8.56 @ M				
Sulphur, Elemental	<10 mg/kg	TM136	25 @ M	24 @ M				
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M				
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M				
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M				
Sulphide, Easily liberated	<15 mg/kg	TM180	40.7 @ M	104 @ M				
Chromium, Trivalent	<0.9 mg/kg	TM181	8.76	8.48				
Arsenic	<0.6 mg/kg	TM181	4.08 M	4.25 M				
Boron	<0.7 mg/kg	TM181	8.8 #	8.67 #				
Cadmium	<0.02 mg/kg	TM181	0.121 M	0.126 M				
Chromium	<0.9 mg/kg	TM181	8.76 M	8.48 M				
Copper	<1.4 mg/kg	TM181	10.4 M	9.85 M				
Iron	<1000 mg/kg	TM181	13800 #	13200 #				
Lead	<0.7 mg/kg	TM181	9.92 M	9.58 M				
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M				
Nickel	<0.2 mg/kg	TM181	14.5 M	13.9 M				
Selenium	<1 mg/kg	TM181	<1 #	<1 #				
Zinc	<1.9 mg/kg	TM181	32.4 M	31 M				
Sulphate, Total	<48 mg/kg	TM221	2540 M	3080 M				
Total Sulphur (ASB)	<0.0016 %	TM221	0.0848	0.103				
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.23	0.22				
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.231 M	0.229 M				
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1	<1				
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35				
EPH Surrogate % recovery**	%	TM415	95.2	93.9				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH25	MS-BH25			
#	ISO17025 accredited.		ADS4220927010	ADS4220927014			
M	mCERTS accredited.		3.50 - 3.50	4.50 - 4.50			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022	27/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:30	16:40			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-44	221018-44			
(F)	Trigger breach confirmed	SDG Ref	27032847	27032854			
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES21	ES24			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	86.5	88.5			
Acenaphthene-d10 % recovery**	%	TM218	91.2	92.8			
Phenanthrene-d10 % recovery**	%	TM218	95.9	92.5			
Chrysene-d12 % recovery**	%	TM218	94.7	90.3			
Perylene-d12 % recovery**	%	TM218	97.6	91.4			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			@ M	@ M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			@ M	@ M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			@ M	@ M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			@ M	@ M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			@ M	@ M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			@ M	@ M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			@ M	@ M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			@ M	@ M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			@ M	@ M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			@ M	@ M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			@ M	@ M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH25			
#	ISO17025 accredited.		ADS4220927010			
M	mCERTS accredited.		3.50 - 3.50			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:30			
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-44			
(F)	Trigger breach confirmed	SDG Ref	27032847			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	ES21			
		AGS Reference				
Component	LOD/Units	Method				
Phenol	<100 µg/kg	TM157	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100			
Nitrobenzene	<100 µg/kg	TM157	<100			
Isophorone	<100 µg/kg	TM157	<100			
Hexachloroethane	<100 µg/kg	TM157	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100			
Dibenzofuran	<100 µg/kg	TM157	<100			
Carbazole	<100 µg/kg	TM157	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100			
Azobenzene	<100 µg/kg	TM157	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100			
4-Methylphenol	<100 µg/kg	TM157	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100			
2-Methylphenol	<100 µg/kg	TM157	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	MS-BH25 ADS4220927010 3.50 - 3.50 Soil/Solid (S) 27/09/2022 16:30 12/10/2022 221018-44 27032847 ES21				
# ISO17025 accredited.	M mCERTS accredited.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref
sg. Aqueous / settled sample.	dis.filt. Dissolved / filtered sample.						Lab Sample No.(s)
tot.unfilt. Total / unfiltered sample.	*						AGS Reference
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F) Trigger breach confirmed							
1-4-§@ Sample deviation (see appendix)							
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100				
2,4-Dimethylphenol	<100 µg/kg	TM157	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100				
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100				
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100				
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100				
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100				
2-Chloronaphthalene	<100 µg/kg	TM157	<100				
2-Methylnaphthalene	<100 µg/kg	TM157	<100				
Acenaphthylene	<100 µg/kg	TM157	<100				
Acenaphthene	<100 µg/kg	TM157	<100				
Anthracene	<100 µg/kg	TM157	<100				
Benzo(a)anthracene	<100 µg/kg	TM157	<100				
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100				
Benzo(a)pyrene	<100 µg/kg	TM157	<100				
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100				
Chrysene	<100 µg/kg	TM157	<100				
Fluoranthene	<100 µg/kg	TM157	<100				
Fluorene	<100 µg/kg	TM157	<100				
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100				
Phenanthrene	<100 µg/kg	TM157	<100				
Pyrene	<100 µg/kg	TM157	<100				
Naphthalene	<100 µg/kg	TM157	<100				
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100				
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.		MS-BH25						
#	ISO17025 accredited.			ADS4220927014						
M	mCERTS accredited.			4.50 - 4.50						
aq	Aqueous / settled sample.			Soil/Solid (S)						
diss.filt	Dissolved / filtered sample.			27/09/2022						
tot.unfilt	Total / unfiltered sample.			16:40						
	* Subcontracted - refer to subcontractor report for accreditation status.			12/10/2022						
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221018-44						
(F)	Trigger breach confirmed			27032854						
1-4*§	Sample deviation (see appendix)			ES24						
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
GRO Surrogate % recovery**	%	TM089	104	@						
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10	@						
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	53.7	@						
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	90.4	@						
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2010	@ #						
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	@						
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	@						
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000	@						
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10	@						
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10	@						
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	60.3	@						
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@ #						
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	2440	@ #						
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1490	@						
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	@						
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000	@						
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000	@						
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	144	@						
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	60.3	@						
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	204	@						



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
Client Ref.: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH25	MS-BH25			
#	ISO17025 accredited.		ADS4220927010	ADS4220927014			
M	mCERTS accredited.		3.50 - 3.50	4.50 - 4.50			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/09/2022	27/09/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	16:30	16:40			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	12/10/2022	12/10/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-44	221018-44			
	(F) Trigger breach confirmed	SDG Ref	27032847	27032854			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES21	ES24			
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	113 @	121 @			
Toluene-d8**	%	TM116	98.5 @	97.7 @			
4-Bromofluorobenzene**	%	TM116	74.8 @	74.7 @			
Dichlorodifluoromethane	<6 µg/kg	TM116	<6 @ #				
Chloromethane	<7 µg/kg	TM116	<7 @ #				
Vinyl Chloride	<6 µg/kg	TM116	<6 @ M				
Bromomethane	<10 µg/kg	TM116	<10 @ M				
Chloroethane	<10 µg/kg	TM116	<10 @ M				
Trichlorofluoromethane	<6 µg/kg	TM116	<6 @ M				
1,1-Dichloroethene	<10 µg/kg	TM116	<10 @ #				
Carbon Disulphide	<7 µg/kg	TM116	<7 @ M				
Dichloromethane	<10 µg/kg	TM116	<30 @ #				
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10 @ M	<10 @ M			
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10 @ M				
1,1-Dichloroethane	<8 µg/kg	TM116	<8 @ M				
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 @ M				
2,2-Dichloropropane	<10 µg/kg	TM116	<10 @				
Bromochloromethane	<10 µg/kg	TM116	<10 @ M				
Chloroform	<8 µg/kg	TM116	<8 @ M				
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7 @ M				
1,1-Dichloropropene	<10 µg/kg	TM116	<10 @ M				
Carbontetrachloride	<10 µg/kg	TM116	<10 @ M				
1,2-Dichloroethane	<5 µg/kg	TM116	<5 @ M				
Benzene	<9 µg/kg	TM116	<9 @ M	<9 @ M			
Trichloroethene	<9 µg/kg	TM116	<9 @ #				
1,2-Dichloropropane	<10 µg/kg	TM116	<10 @ M				
Dibromomethane	<9 µg/kg	TM116	<9 @ M				
Bromodichloromethane	<7 µg/kg	TM116	<7 @ M				
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10 @ M				
Toluene	<7 µg/kg	TM116	<7 @ M	<7 @ M			
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10 @				
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10 @ M				
1,3-Dichloropropane	<7 µg/kg	TM116	<7 @ M				



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Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	MS-BH25 ADS4220927010 3.50 - 3.50 Soil/Solid (S) 27/09/2022 16:30 12/10/2022 221018-44 27032847 ES21	MS-BH25 ADS4220927014 4.50 - 4.50 Soil/Solid (S) 27/09/2022 16:40 12/10/2022 221018-44 27032854 ES24			
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116	<5	@ M			
Dibromochloromethane	<10 µg/kg	TM116	<10	@ M			
1,2-Dibromoethane	<10 µg/kg	TM116	<10	@ M			
Chlorobenzene	<5 µg/kg	TM116	<5	@ M			
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	@ M			
Ethylbenzene	<4 µg/kg	TM116	<4	@ M	<4	@ M	
p/m-Xylene	<10 µg/kg	TM116	<10	@ #	<10	@ #	
o-Xylene	<10 µg/kg	TM116	<10	@ M	<10	@ M	
Styrene	<10 µg/kg	TM116	<10	@ #			
Bromofom	<10 µg/kg	TM116	<10	@ M			
Isopropylbenzene	<5 µg/kg	TM116	<5	@ #			
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	@ #			
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	@ M			
Bromobenzene	<10 µg/kg	TM116	<10	@ M			
Propylbenzene	<10 µg/kg	TM116	<10	@ M			
2-Chlorotoluene	<9 µg/kg	TM116	<9	@ M			
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	@ M			
4-Chlorotoluene	<10 µg/kg	TM116	<10	@ M			
tert-Butylbenzene	<14 µg/kg	TM116	<14	@ #			
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	@ #			
sec-Butylbenzene	<10 µg/kg	TM116	<10	@			
4-Isopropyltoluene	<10 µg/kg	TM116	<10	@			
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	@ M			
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	@ M			
n-Butylbenzene	<11 µg/kg	TM116	<11	@			
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	@ M			
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	@ M			
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	@ #			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	@			
Hexachlorobutadiene	<20 µg/kg	TM116	<20	@			
Naphthalene	<13 µg/kg	TM116	<13	@ M			
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20	@ #			
1,3,5-Trichlorobenzene	<20 µg/kg	TM116	<20	@ #			



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SDG: 221018-44
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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-44
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Superseded Report:

Test Completion Dates

Lab Sample No(s)	27032847	27032854
Customer Sample Ref.	MS-BH25	MS-BH25
AGS Ref.	ES21	ES24
Depth	3.50 - 3.50	4.50 - 4.50
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	25-Oct-2022	25-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022
Chromium III	21-Oct-2022	21-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2022	20-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	20-Oct-2022
Elemental Sulphur	26-Oct-2022	26-Oct-2022
EPH	27-Oct-2022	27-Oct-2022
EPH by GCxGC-FID	20-Oct-2022	20-Oct-2022
EPH CWG GC (S)		21-Oct-2022
GRO by GC-FID (S)	27-Oct-2022	27-Oct-2022
Hexavalent Chromium (s)	20-Oct-2022	20-Oct-2022
Metals in solid samples by OES	21-Oct-2022	21-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022	20-Oct-2022
PAH by GCMS	19-Oct-2022	19-Oct-2022
pH	19-Oct-2022	25-Oct-2022
Phenols by HPLC (S)	21-Oct-2022	21-Oct-2022
Sample description	18-Oct-2022	18-Oct-2022
Semi Volatile Organic Compounds	20-Oct-2022	
Total Organic Carbon	24-Oct-2022	25-Oct-2022
Total Sulphate	20-Oct-2022	20-Oct-2022
TPH CWG GC (S)		27-Oct-2022
VOC MS (S)	24-Oct-2022	24-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221018-44
Client Ref: F212561

Report Number: 666231
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	31 October 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221018-45
Your Reference:	F212561
Location:	Keadby 3
Report No:	666586
Order Number:	386/121917/CP

This report has been revised and directly supersedes 666551 in its entirety.

We received 8 samples on Wednesday October 12, 2022 and 5 of these samples were scheduled for analysis which was completed on Monday October 31, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

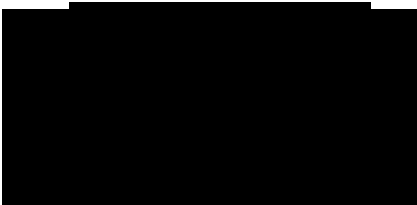
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27032861	MS-BH13	ES1	0.10 - 0.10	04/10/2022
27032868	MS-BH13	ES4	0.40 - 0.40	04/10/2022
27032875	MS-BH13	ES5	0.70 - 0.70	04/10/2022
27032883	MS-BH13	ES8	1.20 - 1.20	04/10/2022
27032890	MS-BH18	ES2	0.10 - 0.10	06/10/2022
27032897	MS-BH18	ES4	0.40 - 0.40	06/10/2022
27032904	MS-BH18	ES6	0.70 - 0.70	06/10/2022
27032911	MS-BH18	ES8	1.00 - 1.00	06/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27032811	MS-BH18	ES8	1.00 - 1.00	60g VOC (ALE215)	S
		27032897	MS-BH18	ES4	0.40 - 0.40	250g Amber Jar (ALE210)	S
		27032883	MS-BH13	ES8	1.20 - 1.20	1kg TUB with Handle (ALE260)	S
		27032875	MS-BH13	ES5	0.70 - 0.70	250g Amber Jar (ALE210)	S
		27032868	MS-BH13	ES4	0.40 - 0.40	250g Amber Jar (ALE210)	S
					60g VOC (ALE215)	S	
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 5					
Anions by Kone (soil)	All	NDPs: 0 Tests: 5					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 5					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 5					
Elemental Sulphur	All	NDPs: 0 Tests: 5					
EPH	All	NDPs: 0 Tests: 5					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 5					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 5					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 5					
Metals in solid samples by OES	All	NDPs: 0 Tests: 5					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 5					
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27032868	27032875	27032883	27032897	27032911
Customer Sample Reference	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
AGS Reference	ES4	ES5	ES8	ES4	ES8
Depth (m)	0.40 - 0.40	0.70 - 0.70	1.20 - 1.20	0.40 - 0.40	1.00 - 1.00
Container	250g Amber Jar (ALE210) 60g VOC (ALE215)	250g Amber Jar (ALE210) 60g VOC (ALE215)	250g Amber Jar (ALE210) 60g VOC (ALE215)	250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260) 60g VOC (ALE215)	250g Amber Jar (ALE210) 60g VOC (ALE215)
Sample Type	S	S	S	S	S

PAH by GCMS	All	NDPs: 0 Tests: 5	X	X	X	X	X
PCBs by GCMS	All	NDPs: 0 Tests: 1		X			
pH	All	NDPs: 0 Tests: 5	X	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 5	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 5	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 5	X	X	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 5	X	X	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 5		X	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27032868	MS-BH13	0.40 - 0.40	Light Brown	Sandy Loam	Stones	Vegetation
27032875	MS-BH13	0.70 - 0.70	Light Brown	Sand	None	None
27032883	MS-BH13	1.20 - 1.20	Light Brown	Sand	None	None
27032897	MS-BH18	0.40 - 0.40	Light Brown	Sandy Clay Loam	Stones	Vegetation
27032911	MS-BH18	1.00 - 1.00	Light Brown	Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Results Legend		Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.40	0.70 - 0.70	1.20 - 1.20	0.40 - 0.40	1.00 - 1.00
M	mCERTS accredited.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.		04/10/2022	04/10/2022	04/10/2022	06/10/2022	06/10/2022
diss.filt	Dissolved / filtered sample.		12:10	12:20	12:35	13:35	14:15
tot.unfilt	Total / unfiltered sample.		12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
*	Subcontracted - refer to subcontractor report for accreditation status.		221018-45	221018-45	221018-45	221018-45	221018-45
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		27032868	27032875	27032883	27032897	27032911
(F)	Trigger breach confirmed		ES4	ES5	ES8	ES4	ES8
1-4*§	Sample deviation (see appendix)						
Component	LOD/Units		Method				
Moisture Content Ratio (% of as received sample)	%	PM024	12	12	13	20	18
2,4,5-T*	<0.01 mg/kg	SUB	<0.01				
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01				
2,4-D*	<0.01 mg/kg	SUB	<0.01				
2,4-DB*	<0.01 mg/kg	SUB	<0.01				
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01				
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01				
Acifluorfen*	<0.01 mg/kg	SUB	<0.01				
Bentazone*	<0.01 mg/kg	SUB	<0.01				
Bromoxynil*	<0.01 mg/kg	SUB	<0.01				
Dicamba*	<0.01 mg/kg	SUB	<0.01				
Diclofop*	<0.01 mg/kg	SUB	<0.01				
Dinoseb*	<0.01 mg/kg	SUB	<0.01				
DNOC*	<0.01 mg/kg	SUB	<0.01				
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01				
loxynil*	<0.01 mg/kg	SUB	<0.01				
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01				
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01				
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01				
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01				
Triclopyr*	<0.01 mg/kg	SUB	<0.01				
Triclosan*	<0.01 mg/kg	SUB	<0.01				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15	<15	<15
			M	M	M	M	M
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12	<12	<12
			M	M	M	M	M
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01
			@ M	@ M	@ M	M	M
Cresols	<0.01 mg/kg	TM062 (S)	0.0113	<0.01	<0.01	<0.01	<0.01
			@ M	@ M	@ M	M	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015
			@ M	@ M	@ M	M	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035
			@ M	@ M	@ M	M	M
Soil Organic Matter (SOM)	<0.35 %	TM132	7.38	<0.35	<0.35	4.6	0.909
			#	#	#	#	#
pH	1 pH Units	TM133	8.3	8.34	8.32	8.01	7.95
			M	M	M	M	M
Sulphur, Elemental	<10 mg/kg	TM136	119	<10	<10	15.8	<10
			M	M	M	M	M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	<0.6
			M	M	M	M	M
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1
			@ M	@ M	@ M	M	M



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Results Legend		Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.40 Soil/Solid (S) 04/10/2022 12:10 12/10/2022 221018-45 27032868 ES4	0.70 - 0.70 Soil/Solid (S) 04/10/2022 12:20 12/10/2022 221018-45 27032875 ES5	1.20 - 1.20 Soil/Solid (S) 04/10/2022 12:35 12/10/2022 221018-45 27032883 ES8	0.40 - 0.40 Soil/Solid (S) 06/10/2022 13:35 12/10/2022 221018-45 27032897 ES4	1.00 - 1.00 Soil/Solid (S) 06/10/2022 14:15 12/10/2022 221018-45 27032911 ES8
Component	LOD/Units	Method					
Cyanide, Free	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M	<1 M	<1 M
PCB congener 28	<3 µg/kg	TM168		<3 M			
PCB congener 52	<3 µg/kg	TM168		<3 M			
PCB congener 101	<3 µg/kg	TM168		<3 M			
PCB congener 118	<3 µg/kg	TM168		<3 M			
PCB congener 138	<3 µg/kg	TM168		<3 M			
PCB congener 153	<3 µg/kg	TM168		<3 M			
PCB congener 180	<3 µg/kg	TM168		<3 M			
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168		<21			
PCB congener 81	<3 µg/kg	TM168		<3 M			
PCB congener 77	<3 µg/kg	TM168		<3 M			
PCB congener 123	<3 µg/kg	TM168		<3 M			
PCB congener 114	<3 µg/kg	TM168		<3 M			
PCB congener 105	<3 µg/kg	TM168		<3 M			
PCB congener 126	<3 µg/kg	TM168		<3 M			
PCB congener 167	<3 µg/kg	TM168		<3 M			
PCB congener 156	<3 µg/kg	TM168		<3 M			
PCB congener 157	<3 µg/kg	TM168		<3 M			
PCB congener 169	<3 µg/kg	TM168		<3 M			
PCB congener 189	<3 µg/kg	TM168		<3 M			
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168		<36			
Sulphide, Easily liberated	<15 mg/kg	TM180	22.4 @ M	<15 @ M	<15 @ M	<15 @ M	<15 @ M
Chromium, Trivalent	<0.9 mg/kg	TM181	39.2	4.13	4.87	12.8	5.41
Arsenic	<0.6 mg/kg	TM181	22.7 M	1.98 M	3.38 M	13.7 M	1.48 M
Boron	<0.7 mg/kg	TM181	12.3 #	<0.7 #	0.781 #	12.8 #	1.58 #
Cadmium	<0.02 mg/kg	TM181	0.558 M	0.0353 M	0.0497 M	0.229 M	<0.02 M
Chromium	<0.9 mg/kg	TM181	39.2 M	4.13 M	4.87 M	12.8 M	5.41 M
Copper	<1.4 mg/kg	TM181	57.4 M	3.66 M	4.04 M	16.4 M	2.34 M
Iron	<1000 mg/kg	TM181	36500 #	3490 #	4380 #	24400 #	3060 #
Lead	<0.7 mg/kg	TM181	69.1 M	4.89 M	6.43 M	72.9 M	6.26 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	24.3 M	5.03 M	5.87 M	22 M	6.28 M
Selenium	<1 mg/kg	TM181	1.66 #	<1 #	<1 #	<1 #	<1 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Results Legend			Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18	
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-4*§@	Sample deviation (see appendix)								
Component	LOD/Units	Method	AGS Reference						
Zinc	<1.9 mg/kg	TM181	ES4	323	12.4	18.4	90.5	9.1	
				M	M	M	M	M	
Sulphate, Total	<48 mg/kg	TM221	ES4	1970	<48	<48	575	237	
				M	M	M	M	M	
Total Sulphur (ASB)	<0.0016 %	TM221	ES4	0.0656	<0.0016	<0.0016	0.0192	0.0079	
Nitrite as NO ₂ , 2:1 water soluble	<0.1 mg/kg	TM243	ES4	0.38	0.16	0.14	1.68	0.32	
Water Soluble Sulphate as SO ₄ 2:1 Extract	<0.004 g/l	TM243	ES4	0.234	0.0128	0.0127	0.0917	0.0746	
				M	M	M	M	M	
Nitrate as NO ₃ , 2:1 water soluble	<1 mg/kg	TM243	ES4	13.5	3.29	2.2	19.4	11.1	
EPH (C5-C40)	<35 mg/kg	TM415	ES4	132	<35	<35	57.8	<35	
EPH Surrogate % recovery**	%	TM415	ES4	94	103	101	103	98.4	
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	ES4	132	<35	<35	57.8	<35	
				@ M	@ M	@ M	M	M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.	MS-BH13					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.40 Soil/Solid (S) 04/10/2022 12:10 12/10/2022 221018-45 27032868 ES4					
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-4*\$@	Sample deviation (see appendix)							
Component	LOD/Units			Method				
Dichlorvos	<50 µg/kg	TM073	<50					
Mevinphos	<50 µg/kg	TM073	<50					
Phorate	<50 µg/kg	TM073	<50					
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50					
Diazinon	<50 µg/kg	TM073	<50					
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50					
Disulfoton	<50 µg/kg	TM073	<50					
Heptachlor	<50 µg/kg	TM073	<50					
Aldrin	<50 µg/kg	TM073	<50					
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50					
Methyl parathion	<50 µg/kg	TM073	<50					
Malathion	<50 µg/kg	TM073	<50					
Fenitrothion	<50 µg/kg	TM073	<50					
Heptachlor epoxide	<50 µg/kg	TM073	<50					
Parathion	<50 µg/kg	TM073	<50					
Endosulphan I	<50 µg/kg	TM073	<50					
p,p-DDE	<50 µg/kg	TM073	<50					
Dieldrin	<50 µg/kg	TM073	<50					
Endrin	<50 µg/kg	TM073	<50					
p,p-TDE (DDD)	<50 µg/kg	TM073	<50					
Ethion	<50 µg/kg	TM073	<50					
Endosulphan II	<50 µg/kg	TM073	<50					
p,p-DDT	<50 µg/kg	TM073	<50					
p,p-Methoxychlor	<50 µg/kg	TM073	<50					
Endosulphan sulphate	<50 µg/kg	TM073	<50					
Azinphos-methyl	<50 µg/kg	TM073	<50					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

PAH by GCMS

Results Legend		Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
M	mCERTS accredited.		0.40 - 0.40	0.70 - 0.70	1.20 - 1.20	0.40 - 0.40	1.00 - 1.00
aq	Aqueous / settled sample.		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.		04/10/2022	04/10/2022	04/10/2022	06/10/2022	06/10/2022
tot.unfilt	Total / unfiltered sample.		12:10	12:20	12:35	13:35	14:15
*	Subcontracted - refer to subcontractor report for accreditation status.		12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221018-45	221018-45	221018-45	221018-45	221018-45
(F)	Trigger breach confirmed		27032868	27032875	27032883	27032897	27032911
1-4*§	Sample deviation (see appendix)		ES4	ES5	ES8	ES4	ES8
Component	LOD/Units		Method				
Naphthalene-d8 % recovery**	%	TM218	87.6	90.9	89	87.7	90.5
Acenaphthene-d10 % recovery**	%	TM218	94.4	92.9	86.9	93.2	92.3
Phenanthrene-d10 % recovery**	%	TM218	100	95.1	83.1	94.6	94.5
Chrysene-d12 % recovery**	%	TM218	90	87.1	81.2	84.1	100
Perylene-d12 % recovery**	%	TM218	95.6	77.8	81.9	81.4	98.6
Naphthalene	<9 µg/kg	TM218	107	<9	<9	12	<9
			@ M	@ M	@ M	M	M
Acenaphthylene	<12 µg/kg	TM218	69	<12	<12	<12	<12
			@ M	@ M	@ M	M	M
Acenaphthene	<8 µg/kg	TM218	68.6	<8	<8	<8	<8
			@ M	@ M	@ M	M	M
Fluorene	<10 µg/kg	TM218	75.9	<10	<10	<10	<10
			@ M	@ M	@ M	M	M
Phenanthrene	<15 µg/kg	TM218	1240	<15	<15	107	<15
			@ M	@ M	@ M	M	M
Anthracene	<16 µg/kg	TM218	332	<16	<16	<16	<16
			@ M	@ M	@ M	M	M
Fluoranthene	<17 µg/kg	TM218	2790	<17	<17	244	<17
			@ M	@ M	@ M	M	M
Pyrene	<15 µg/kg	TM218	2180	<15	<15	215	<15
			@ M	@ M	@ M	M	M
Benz(a)anthracene	<14 µg/kg	TM218	1240	<14	<14	119	<14
			@ M	@ M	@ M	M	M
Chrysene	<10 µg/kg	TM218	1140	<10	<10	137	<10
			@ M	@ M	@ M	M	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	1780	<15	<15	229	<15
			@ M	@ M	@ M	M	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	706	<14	<14	76.9	<14
			@ M	@ M	@ M	M	M
Benzo(a)pyrene	<15 µg/kg	TM218	1290	<15	<15	143	<15
			@ M	@ M	@ M	M	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	834	<18	<18	112	<18
			@ M	@ M	@ M	M	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	205	<23	<23	<23	<23
			@ M	@ M	@ M	M	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	831	<24	<24	125	<24
			@ M	@ M	@ M	M	M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	14900	<118	<118	1520	<118



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

VOC MS (S)

Results Legend			Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18		
#	ISO17025 accredited.									
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
	* Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-4*\$@	Sample deviation (see appendix)									
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
Dibromofluoromethane**	%	TM116	0.40 - 0.40	Soil/Solid (S)	04/10/2022	12:10	12/10/2022	221018-45	27032868	ES4
Toluene-d8**	%	TM116	0.70 - 0.70	Soil/Solid (S)	04/10/2022	12:20	12/10/2022	221018-45	27032875	ES5
4-Bromofluorobenzene**	%	TM116	1.20 - 1.20	Soil/Solid (S)	04/10/2022	13:35	12/10/2022	221018-45	27032883	ES8
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
Benzene	<9 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
Toluene	<7 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
Ethylbenzene	<4 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
p/m-Xylene	<10 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
o-Xylene	<10 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8
Sum of BTEX	<40 µg/kg	TM116	0.40 - 0.40	Soil/Solid (S)	06/10/2022	14:15	12/10/2022	221018-45	27032911	ES8



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH18ES4 0.40 - 0.40 SOLID 06/10/2022 00:00:00 12/10/2022 05:00:00 221018-45 27032897 TM048	26/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	MS-BH18ES8 1.00 - 1.00 SOLID 06/10/2022 00:00:00 12/10/2022 05:00:00 221018-45 27032911 TM048	27/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

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Location: Keadby 3

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Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-45
Client Ref.: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Test Completion Dates

Lab Sample No(s)	27032868	27032875	27032883	27032897	27032911
Customer Sample Ref.	MS-BH13	MS-BH13	MS-BH13	MS-BH18	MS-BH18
AGS Ref.	ES4	ES5	ES8	ES4	ES8
Depth	0.40 - 0.40	0.70 - 0.70	1.20 - 1.20	0.40 - 0.40	1.00 - 1.00
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Acid herbicides*	31-Oct-2022				
Ammonium Soil by Titration	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022	20-Oct-2022	26-Oct-2022	26-Oct-2022
Asbestos ID in Solid Samples				26-Oct-2022	27-Oct-2022
Chromium III	21-Oct-2022	21-Oct-2022	21-Oct-2022	25-Oct-2022	25-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2022	20-Oct-2022	20-Oct-2022	24-Oct-2022	24-Oct-2022
Easily Liberated Sulphide	20-Oct-2022	24-Oct-2022	24-Oct-2022	27-Oct-2022	24-Oct-2022
Elemental Sulphur	26-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022
EPH	26-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
EPH by GCxGC-FID	20-Oct-2022	20-Oct-2022	20-Oct-2022	21-Oct-2022	21-Oct-2022
GRO by GC-FID (S)	26-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
Hexavalent Chromium (s)	20-Oct-2022	20-Oct-2022	20-Oct-2022	20-Oct-2022	20-Oct-2022
Metals in solid samples by OES	21-Oct-2022	21-Oct-2022	21-Oct-2022	26-Oct-2022	26-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022	20-Oct-2022	20-Oct-2022	27-Oct-2022	27-Oct-2022
OC OP Pesticides and Triazine Herb	31-Oct-2022				
PAH by GCMS	19-Oct-2022	20-Oct-2022	24-Oct-2022	20-Oct-2022	21-Oct-2022
PCBs by GCMS		21-Oct-2022			
pH	18-Oct-2022	19-Oct-2022	19-Oct-2022	24-Oct-2022	24-Oct-2022
Phenols by HPLC (S)	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022	21-Oct-2022
Sample description	18-Oct-2022	18-Oct-2022	18-Oct-2022	18-Oct-2022	18-Oct-2022
Total Organic Carbon	24-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
Total Sulphate	20-Oct-2022	20-Oct-2022	20-Oct-2022	25-Oct-2022	25-Oct-2022
VOC MS (S)	25-Oct-2022	24-Oct-2022	24-Oct-2022	25-Oct-2022	25-Oct-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR22A8037	Issue Date	: 31-Oct-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 221018-45	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 21-Oct-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 22-Oct-2022 - 31-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

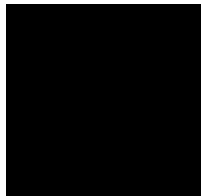
The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL				Client sample ID		27034218		----		----	
				Laboratory sample ID		MS-BH13		----		----	
				Client sampling date / time		PR22A8037001		----		----	
						18-Oct-2022 09:12		----		----	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU	Result	MU
Physical Parameters											
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	87.8	± 6.0%	----	----	----	----	----	----
Pesticides											
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
MCPB (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.



CERTIFICATE OF ANALYSIS

SDG: 221018-45
Client Ref: F212561

Report Number: 666586
Location: Keadby 3

Superseded Report: 666551

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 31 October 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221018-50
Your Reference: F212561
Location: Keadby 3
Report No: 666587
Order Number: 386/121917/CP

This report has been revised and directly supersedes 666548 in its entirety.

We received 10 samples on Friday October 14, 2022 and 5 of these samples were scheduled for analysis which was completed on Monday October 31, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

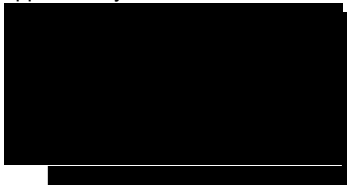
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27032966	AR-BH02	ES2	0.10 - 0.10	12/10/2022
27032978	AR-BH02	ES5	0.30 - 0.30	12/10/2022
27032986	AR-BH02	ES8	0.70 - 0.70	12/10/2022
27032952	AR-BH02	ES11	1.20 - 1.20	12/10/2022
27032994	BH104	ES12	2.80 - 2.80	06/10/2022
27033002	BH104	ES14	3.80 - 3.80	06/10/2022
27033009	BH104	ES16	4.80 - 4.80	06/10/2022
27033016	BH104	ES20	5.80 - 5.80	06/10/2022
27033023	BH104	ES22	6.80 - 6.80	06/10/2022
27032959	BH104	ES24	7.80 - 7.80	06/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27032978	AR-BH02	ESS	0.30 - 0.30	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		27032952	AR-BH02	ES11	1.20 - 1.20	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		27032994	BH104	ES12	2.80 - 2.80	1kg TUB with Handle (ALE260) 250g Amber Jar (ALE210)	S
		27033009	BH104	ES16	4.80 - 4.80	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
		27032959	BH104	ES24	7.80 - 7.80	250g Amber Jar (ALE210) 60g VOC (ALE215)	S
Acid herbicides*	All	NDPs: 0 Tests: 2					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 5					
Anions by Kone (soil)	All	NDPs: 0 Tests: 5					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 5					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 5					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 5					
Elemental Sulphur	All	NDPs: 0 Tests: 5					
EPH	All	NDPs: 0 Tests: 5					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 5					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 5					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 5					
Metals in solid samples by OES	All	NDPs: 0 Tests: 5					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 5					
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 2					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container		Sample Type
				Container	Sample Type	
27032978	AR-BH02	ES5	0.30 - 0.30	250g Amber Jar (ALE210)	S	S
27032952	AR-BH02	ES11	1.20 - 1.20	250g Amber Jar (ALE210)	S	S
27032994	BH104	ES12	2.80 - 2.80	1kg TUB with Handle (ALE260)	S	S
27033009	BH104	ES16	4.80 - 4.80	250g Amber Jar (ALE210)	S	S
27032959	BH104	ES24	7.80 - 7.80	60g VOC (ALE215)	S	S

Parameter	Method	NDPs: 0 Tests: 5	27032978	27032952	27032994	27033009	27032959
PAH by GCMS	All	NDPs: 0 Tests: 5	X	X	X	X	X
pH	All	NDPs: 0 Tests: 5	X	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 5	X	X	X	X	X
Sample description	All	NDPs: 0 Tests: 5	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 5	X	X	X	X	X
Total Sulphate	All	NDPs: 0 Tests: 5	X	X	X	X	X
VOC MS (S)	All	NDPs: 0 Tests: 5	X	X	X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27032952	AR-BH02	1.20 - 1.20	Light Brown	Sand	None	None
27032978	AR-BH02	0.30 - 0.30	Light Brown	Sandy Clay Loam	Stones	Vegetation
27032959	BH104	7.80 - 7.80	Dark Brown	Sand	None	None
27032994	BH104	2.80 - 2.80	Dark Brown	Silt Loam	Vegetation	None
27033009	BH104	4.80 - 4.80	Dark Brown	Silt Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Results Legend		Customer Sample Ref.	AR-BH02	AR-BH02	BH104	BH104	BH104
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)		AR-BH02 F-WD00WB-WBMP 0.30 - 0.30 Soil/Solid (S) 12/10/2022 11:10 14/10/2022 221018-50 27032978 ES5	AR-BH02 F-5H00WB-ULAE 1.20 - 1.20 Soil/Solid (S) 12/10/2022 11:35 14/10/2022 221018-50 27032952 ES11	BH104 F-F8D0WB-6QS8 2.80 - 2.80 Soil/Solid (S) 06/10/2022 12:04 14/10/2022 221018-50 27032994 ES12	BH104 F-2GD0WB-HZE1 4.80 - 4.80 Soil/Solid (S) 06/10/2022 13:15 14/10/2022 221018-50 27033009 ES16	BH104 F-TJD0WB-Z3Z7 7.80 - 7.80 Soil/Solid (S) 06/10/2022 14:41 14/10/2022 221018-50 27032959 ES24	
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	17	17	23	19	22
2,4,5-T*	<0.01 mg/kg	SUB	<0.01	<0.01			
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01	<0.01			
2,4-D*	<0.01 mg/kg	SUB	<0.01	<0.01			
2,4-DB*	<0.01 mg/kg	SUB	<0.01	<0.01			
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01	<0.01			
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01	<0.01			
Acifluorfen*	<0.01 mg/kg	SUB	<0.01	<0.01			
Bentazone*	<0.01 mg/kg	SUB	<0.01	<0.01			
Bromoxynil*	<0.01 mg/kg	SUB	<0.01	<0.01			
Dicamba*	<0.01 mg/kg	SUB	<0.01	<0.01			
Diclofop*	<0.01 mg/kg	SUB	<0.01	<0.01			
Dinoseb*	<0.01 mg/kg	SUB	<0.01	<0.01			
DNOC*	<0.01 mg/kg	SUB	<0.01	<0.01			
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01	<0.01			
loxylin*	<0.01 mg/kg	SUB	<0.01	<0.01			
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01	<0.01			
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01	<0.01			
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01	<0.01			
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01	<0.01			
Triclopyr*	<0.01 mg/kg	SUB	<0.01	<0.01			
Triclosan*	<0.01 mg/kg	SUB	<0.01	<0.01			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15	<15	<15	<15
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12	<12	<12	<12
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01	<0.01	<0.01
Cresols	<0.01 mg/kg	TM062 (S)	0.012	<0.01	<0.01	<0.01	<0.01
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	<0.015	<0.015	<0.015
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	<0.035	<0.035	<0.035
Soil Organic Matter (SOM)	<0.35 %	TM132	2.14	<0.35	7.71	6.41	0.798
pH	1 pH Units	TM133	8.23	8.03	8.43	8.44	10.5
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10	<10	<10	<10
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6	<0.6	<0.6	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Results Legend		Customer Sample Ref.	AR-BH02 F-WD00WB-WBMP 0.30 - 0.30 Soil/Solid (S) 12/10/2022 11:10 14/10/2022 221018-50 27032978 ES5	AR-BH02 F-SHO0WB-LUAE 1.20 - 1.20 Soil/Solid (S) 12/10/2022 11:35 14/10/2022 221018-50 27032952 ES11	BH104 F-F8D0WB-8QS8 2.80 - 2.80 Soil/Solid (S) 06/10/2022 12:04 14/10/2022 221018-50 27032994 ES12	BH104 F-2GD0WB-HZE1 4.80 - 4.80 Soil/Solid (S) 06/10/2022 13:15 14/10/2022 221018-50 27033009 ES16	BH104 F-TJD0WB-Z3Z7 7.80 - 7.80 Soil/Solid (S) 06/10/2022 14:41 14/10/2022 221018-50 27032959 ES24
Component	LOD/Units						
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 @ M	<1 @ M	<1 M
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M	<15 @ M	<15 @ M
Chromium, Trivalent	<0.9 mg/kg	TM181	14.9	5.87	33.6	46.7	6.2
Arsenic	<0.6 mg/kg	TM181	12.2 M	2.29 M	85.7 M	86 M	18.5 M
Boron	<0.7 mg/kg	TM181	10.5 #	1.07 #	23.8 #	19.8 #	16.6 #
Cadmium	<0.02 mg/kg	TM181	0.27 M	<0.02 M	0.147 M	0.639 M	0.0996 M
Chromium	<0.9 mg/kg	TM181	14.9 M	5.87 M	33.6 M	46.7 M	6.2 M
Copper	<1.4 mg/kg	TM181	15.3 M	4.72 M	76.2 M	83.1 M	15.2 M
Iron	<1000 mg/kg	TM181	23900 #	4420 #	24100 #	26600 #	7630 #
Lead	<0.7 mg/kg	TM181	75.7 M	4.79 M	49.3 M	68.7 M	11.1 M
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M	<1 M	<0.1 M
Nickel	<0.2 mg/kg	TM181	21.6 M	4.99 M	41.4 M	46.4 M	14.4 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	1.64 #	<10 #	<1 #
Zinc	<1.9 mg/kg	TM181	92.8 M	9.58 M	53.4 M	64.3 M	20.6 M
Sulphate, Total	<48 mg/kg	TM221	201 M	<48 M	332 M	126 M	568 M
Total Sulphur (ASB)	<0.0016 %	TM221	0.00671	<0.0016	0.0111	0.00419	0.0189
Nitrite as NO ₂ , 2:1 water soluble	<0.1 mg/kg	TM243	0.47	0.17	0.17	<0.1	0.23
Water Soluble Sulphate as SO ₄ 2:1 Extract	<0.004 g/l	TM243	0.0177 M	0.0144 M	0.0321 M	0.0199 M	0.132 M
Nitrate as NO ₃ , 2:1 water soluble	<1 mg/kg	TM243	4.59	<1	<1	1.43	<1
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	<35	<35	<35
EPH Surrogate % recovery**	%	TM415	99.4	96.2	105	103	106
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 M	<35 M	<35 @ M	<35 @ M	<35 M



CERTIFICATE OF ANALYSIS

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

GRO by GC-FID (S)

Results Legend			Customer Sample Ref.		AR-BH02	AR-BH02	BH104	BH104	BH104	
#	ISO17025 accredited.		AR-BH02		F-WD00WB-WBMP	F-5HO0WB-ULAE	F-F8D0WB-6QS8	F-2GD0WB-HZE1	F-TJD0WB-Z3Z7	
M	mCERTS accredited.		0.30 - 0.30		0.30 - 0.30	1.20 - 1.20	2.80 - 2.80	4.80 - 4.80	7.80 - 7.80	
aq	Aqueous / settled sample.		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
diss.filt	Dissolved / filtered sample.		12/10/2022		12/10/2022	06/10/2022	06/10/2022	06/10/2022	06/10/2022	
tot.unfilt	Total / unfiltered sample.		11:10		11:35	12:04	13:15	14:41		
*	Subcontracted - refer to subcontractor report for accreditation status.		14/10/2022		14/10/2022	14/10/2022	14/10/2022	14/10/2022		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221018-50		221018-50	221018-50	221018-50	221018-50	221018-50	
(F)	Trigger breach confirmed		27032978		27032952	27032994	27033009	27032959	27032959	
1-4*\$@	Sample deviation (see appendix)		ES5		ES11	ES12	ES16	ES24		
Component	LOD/Units	Method								
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20		<20		<20		<20	
							4 @		4 @	
									4 @	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

OC OP Pesticides and Triazine Herb

Results Legend		Customer Sample Ref.		AR-BH02	AR-BH02				
#	ISO17025 accredited.			F-WD00WB-WBMP	F-5H00WB-ULAE				
M	mCERTS accredited.			0.30 - 0.30	1.20 - 1.20				
aq	Aqueous / settled sample.	Depth (m)		Soil/Solid (S)	Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.	Sample Type		12/10/2022	12/10/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled		11:10	11:35				
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		14/10/2022	14/10/2022				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221018-50	221018-50				
(F) Trigger breach confirmed		SDG Ref		27032978	27032952				
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)		ES5	ES11				
		AGS Reference							
Component	LOD/Units	Method							
Dichlorvos	<50 µg/kg	TM073	<50	<50					
Mevinphos	<50 µg/kg	TM073	<50	<50					
Phorate	<50 µg/kg	TM073	<50	<50					
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50					
Diazinon	<50 µg/kg	TM073	<50	<50					
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50	<50					
Disulfoton	<50 µg/kg	TM073	<50	<50					
Heptachlor	<50 µg/kg	TM073	<50	<50					
Aldrin	<50 µg/kg	TM073	<50	<50					
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50					
Methyl parathion	<50 µg/kg	TM073	<50	<50					
Malathion	<50 µg/kg	TM073	<50	<50					
Fenitrothion	<50 µg/kg	TM073	<50	<50					
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50					
Parathion	<50 µg/kg	TM073	<50	<50					
Endosulphan I	<50 µg/kg	TM073	<50	<50					
p,p-DDE	<50 µg/kg	TM073	<50	<50					
Dieldrin	<50 µg/kg	TM073	<50	<50					
Endrin	<50 µg/kg	TM073	<50	<50					
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50					
Ethion	<50 µg/kg	TM073	<50	<50					
Endosulphan II	<50 µg/kg	TM073	<50	<50					
p,p-DDT	<50 µg/kg	TM073	<50	<50					
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50					
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50					
Azinphos-methyl	<50 µg/kg	TM073	<50	<50					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

PAH by GCMS

Results Legend		Customer Sample Ref.	AR-BH02	AR-BH02	BH104	BH104	BH104
#	ISO17025 accredited.		F-WD00WB-WBMP	F-5H00WB-ULAE	F-F8D0WB-6QS8	F-2GD0WB-HZE1	F-TJD0WB-Z3Z7
M	mCERTS accredited.	Depth (m)	0.30 - 0.30	1.20 - 1.20	2.80 - 2.80	4.80 - 4.80	7.80 - 7.80
aq	Aqueous / settled sample.	Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.	Date Sampled	12/10/2022	12/10/2022	06/10/2022	06/10/2022	06/10/2022
tot.unfilt	Total / unfiltered sample.	Date Received	11:10	11:35	12:04	13:15	14:41
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/10/2022	14/10/2022	14/10/2022	14/10/2022	14/10/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221018-50	221018-50	221018-50	221018-50	221018-50
	(F) Trigger breach confirmed	SDG Ref	27032978	27032952	27032994	27033009	27032959
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES5	ES11	ES12	ES16	ES24
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	87.4	91.4	78.4	81.9	68
Acenaphthene-d10 % recovery**	%	TM218	91.2	91.5	76	82.1	63.9
Phenanthrene-d10 % recovery**	%	TM218	95.4	95.5	51.5	65.7	46.4
Chrysene-d12 % recovery**	%	TM218	92.3	84.8	21.5	34.3	30.1
Perylene-d12 % recovery**	%	TM218	94.7	77.8	11.1	17.6	21.4
Naphthalene	<9 µg/kg	TM218	<9	<9	<9	<9	<9
			M	M	@ M	@ M	@ M
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12	<12	<12
			M	M	@ M	@ M	@ M
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8	<8	<8
			M	M	@ M	@ M	@ M
Fluorene	<10 µg/kg	TM218	<10	<10	<10	<10	<10
			M	M	@ M	@ M	@ M
Phenanthrene	<15 µg/kg	TM218	59.2	<15	<15	<15	<15
			M	M	@ M	@ M	@ M
Anthracene	<16 µg/kg	TM218	<16	<16	<16	<16	<16
			M	M	@ M	@ M	@ M
Fluoranthene	<17 µg/kg	TM218	76.6	<17	<17	24.6	<17
			M	M	@ M	@ M	@ M
Pyrene	<15 µg/kg	TM218	66.8	<15	20.2	22.1	<15
			M	M	@ M	@ M	@ M
Benz(a)anthracene	<14 µg/kg	TM218	33	<14	<14	<14	<14
			M	M	@ M	@ M	@ M
Chrysene	<10 µg/kg	TM218	49	<10	16.6	18.7	<10
			M	M	@ M	@ M	@ M
Benzo(b)fluoranthene	<15 µg/kg	TM218	80.2	<15	<15	<15	<15
			M	M	@ M	@ M	@ M
Benzo(k)fluoranthene	<14 µg/kg	TM218	19	<14	<14	<14	<14
			M	M	@ M	@ M	@ M
Benzo(a)pyrene	<15 µg/kg	TM218	35.3	<15	<15	<15	<15
			M	M	@ M	@ M	@ M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	30.7	<18	<18	<18	<18
			M	M	@ M	@ M	@ M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23	<23	<23
			M	M	@ M	@ M	@ M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	41.7	<24	<24	<24	<24
			M	M	@ M	@ M	@ M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	492	<118	<118	<118	<118



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

VOC MS (S)

Results Legend			Customer Sample Ref.		AR-BH02	AR-BH02	BH104	BH104	BH104
#	ISO17025 accredited.				F-WD00WB-WBMP	F-5H00WB-ULAE	F-F8D0WB-6QS8	F-2GD0WB-HZE1	F-TJD0WB-Z3Z7
M	mCERTS accredited.				0.30 - 0.30	1.20 - 1.20	2.80 - 2.80	4.80 - 4.80	7.80 - 7.80
aq	Aqueous / settled sample.		Depth (m)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.		Sample Type		12/10/2022	12/10/2022	06/10/2022	06/10/2022	06/10/2022
tot.unfilt	Total / unfiltered sample.		Date Sampled		11:10	11:35	12:04	13:15	14:41
	* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		14/10/2022	14/10/2022	14/10/2022	14/10/2022	14/10/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221018-50	221018-50	221018-50	221018-50	221018-50
	(F) Trigger breach confirmed		SDG Ref		27032978	27032952	27032994	27033009	27032959
	1-4*#@ Sample deviation (see appendix)		Lab Sample No.(s)		ES5	ES11	ES12	ES16	ES24
			AGS Reference						
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM116	106	108	106	111	107	@	@
Toluene-d8**	%	TM116	98.2	102	103	100	102	@	@
4-Bromofluorobenzene**	%	TM116	90.9	101	86.6	95.7	89.1	@	@
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	<10	<200	<200	<200	@ M	@ M
Benzene	<9 µg/kg	TM116	<90	<9	<180	<180	<180	@ M	@ M
Toluene	<7 µg/kg	TM116	<70	<7	<140	<140	<140	@ M	@ M
Ethylbenzene	<4 µg/kg	TM116	<40	<4	<80	<80	<80	@ M	@ M
p/m-Xylene	<10 µg/kg	TM116	<100	<10	<200	<200	<200	@ #	@ #
o-Xylene	<10 µg/kg	TM116	<100	<10	<200	<200	<200	@ M	@ M
Sum of BTEX	<40 µg/kg	TM116	<400	<40	<800	<800	<800	@	@



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH104ES12 2.80 - 2.80 SOLID 06/10/2022 00:00:00 14/10/2022 05:00:00 221018-50 27032994 TM048	27/10/2022	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH104ES24 7.80 - 7.80 SOLID 06/10/2022 00:00:00 14/10/2022 05:00:00 221018-50 27032959 TM048	27/10/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221018-50
Client Ref.: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Test Completion Dates

Lab Sample No(s)	27032952	27032978	27032959	27032994	27033009
Customer Sample Ref.	AR-BH02	AR-BH02	BH104	BH104	BH104
AGS Ref.	ES11	ES5	ES24	ES12	ES16
Depth	1.20 - 1.20	0.30 - 0.30	7.80 - 7.80	2.80 - 2.80	4.80 - 4.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	31-Oct-2022	31-Oct-2022			
Ammonium Soil by Titration	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
Anions by Kone (soil)	20-Oct-2022	20-Oct-2022	26-Oct-2022	26-Oct-2022	24-Oct-2022
Asbestos ID in Solid Samples			27-Oct-2022	27-Oct-2022	
Chromium III	21-Oct-2022	21-Oct-2022	25-Oct-2022	25-Oct-2022	24-Oct-2022
Cyanide Comp/Free/Total/Thiocyanate	20-Oct-2022	20-Oct-2022	24-Oct-2022	25-Oct-2022	25-Oct-2022
Easily Liberated Sulphide	24-Oct-2022	24-Oct-2022	27-Oct-2022	24-Oct-2022	24-Oct-2022
Elemental Sulphur	26-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022
EPH	25-Oct-2022	25-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022
EPH by GCxGC-FID	20-Oct-2022	20-Oct-2022	21-Oct-2022	24-Oct-2022	24-Oct-2022
GRO by GC-FID (S)	24-Oct-2022	24-Oct-2022	26-Oct-2022	26-Oct-2022	26-Oct-2022
Hexavalent Chromium (s)	20-Oct-2022	20-Oct-2022	20-Oct-2022	24-Oct-2022	24-Oct-2022
Metals in solid samples by OES	21-Oct-2022	21-Oct-2022	26-Oct-2022	26-Oct-2022	25-Oct-2022
NO3, NO2 and TON by KONE (s)	20-Oct-2022	20-Oct-2022	27-Oct-2022	27-Oct-2022	24-Oct-2022
OC OP Pesticides and Triazine Herb	31-Oct-2022	31-Oct-2022			
PAH by GCMS	20-Oct-2022	19-Oct-2022	24-Oct-2022	24-Oct-2022	24-Oct-2022
pH	18-Oct-2022	18-Oct-2022	25-Oct-2022	24-Oct-2022	25-Oct-2022
Phenols by HPLC (S)	21-Oct-2022	21-Oct-2022	21-Oct-2022	25-Oct-2022	25-Oct-2022
Sample description	18-Oct-2022	18-Oct-2022	18-Oct-2022	20-Oct-2022	20-Oct-2022
Total Organic Carbon	24-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022
Total Sulphate	20-Oct-2022	20-Oct-2022	25-Oct-2022	25-Oct-2022	24-Oct-2022
VOC MS (S)	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022	25-Oct-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR22A8038	Issue Date	: 31-Oct-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 221018-50	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 21-Oct-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 22-Oct-2022 - 31-Oct-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný



Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Parameter	Method	LOR	Unit	Client sample ID		Laboratory sample ID		Client sampling date / time	
				27034303	27034341	PR22A8038001	PR22A8038002	18-Oct-2022 09:25	18-Oct-2022 09:36
				AR-BH02	AR-BH02	---	---	---	---
Physical Parameters									
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	82.2	± 6.0%	83.4	± 6.0%	---	---
Pesticides									
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
MCPP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	---	<0.0100	---	---	---

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.



CERTIFICATE OF ANALYSIS

SDG: 221018-50
Client Ref: F212561

Report Number: 666587
Location: Keadby 3

Superseded Report: 666548

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	08 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221027-112
Your Reference:	F212561
Location:	Keadby 3
Report No:	667582
Order Number:	386/121917/CP

We received 4 samples on Tuesday October 25, 2022 and 1 of these samples were scheduled for analysis which was completed on Tuesday November 08, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

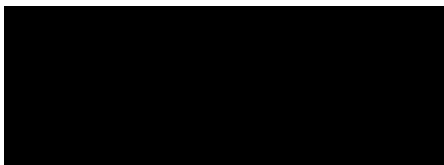
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27083467	BH106	ES1	0.10 - 0.10	21/10/2022
27083480	BH106	ES4	0.40 - 0.40	21/10/2022
27083492	BH106	ES5	0.90 - 0.90	21/10/2022
27083504	BH106	ES6	1.20 - 1.20	21/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27083480	BH106	ES4	0.40 - 0.40	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 1	X			
Anions by Kone (soil)	All	NDPs: 0 Tests: 1	X			
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1	X			
Chromium III	All	NDPs: 0 Tests: 1	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1	X			
Easily Liberated Sulphide	All	NDPs: 0 Tests: 1	X			
Elemental Sulphur	All	NDPs: 0 Tests: 1	X			
EPH	All	NDPs: 0 Tests: 1	X			
EPH by GCxGC-FID	All	NDPs: 0 Tests: 1	X			
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 1	X			
Metals in solid samples by OES	All	NDPs: 0 Tests: 1	X			
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 1	X			
PAH by GCMS	All	NDPs: 0 Tests: 1	X			
pH	All	NDPs: 0 Tests: 1	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other</p>	27083480	BH106	ES4	0.40 - 0.40	60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB with Handle (ALE260)	S S S
Phenols by HPLC (S)	All				NDPs: 0 Tests: 1	X
Sample description	All				NDPs: 0 Tests: 1	X
Total Organic Carbon	All				NDPs: 0 Tests: 1	X
Total Sulphate	All				NDPs: 0 Tests: 1	X
VOC MS (S)	All				NDPs: 0 Tests: 1	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27083480	BH106	0.40 - 0.40	Grey	Sandy Silt Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH106			
# ISO17025 accredited.			F-9L7GWB-4MX6			
M mCERTS accredited.			0.40 - 0.40			
aq Aqueous / settled sample.		Depth (m)	Soil/Solid (S)			
diss.filt Dissolved / filtered sample.		Sample Type	21/10/2022			
tot.unfilt Total / unfiltered sample.		Date Sampled	09:22			
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	25/10/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221027-112			
(F) Trigger breach confirmed		SDG Ref	27083480			
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)	ES4			
		AGS Reference				
Component	LOD/Units	Method				
Moisture Content Ratio (% of as received sample)	%	PM024	19			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M		
Cresols	<0.01 mg/kg	TM062 (S)	0.0246	M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	M		
Soil Organic Matter (SOM)	<0.35 %	TM132	5.93	#		
pH	1 pH Units	TM133	8.51	M		
Sulphur, Elemental	<10 mg/kg	TM136	<10	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	M		
Cyanide, Total	<1 mg/kg	TM153	<1	M		
Cyanide, Free	<1 mg/kg	TM153	<1	M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	@ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	25.4			
Arsenic	<0.6 mg/kg	TM181	56.4	M		
Boron	<0.7 mg/kg	TM181	17.9	#		
Cadmium	<0.02 mg/kg	TM181	<0.02	M		
Chromium	<0.9 mg/kg	TM181	25.4	M		
Copper	<1.4 mg/kg	TM181	78.3	M		
Iron	<1000 mg/kg	TM181	37400	#		
Lead	<0.7 mg/kg	TM181	22.3	M		
Mercury	<0.1 mg/kg	TM181	<0.1	M		
Nickel	<0.2 mg/kg	TM181	36.6	M		
Selenium	<1 mg/kg	TM181	<1	#		
Zinc	<1.9 mg/kg	TM181	41.3	M		
Sulphate, Total	<48 mg/kg	TM221	317	M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0106			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.44			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0206	M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	1.51			
EPH (C5-C40)	<35 mg/kg	TM415	<35			
EPH Surrogate % recovery**	%	TM415	101			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.											
<small># ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filter Dissolved / filtered sample. tot.unfiltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)</small>		<small>Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference</small>		<small>BH106 F-9LTGWB-4MX6 0.40 - 0.40 Soil/Solid (S) 21/10/2022 09:22 25/10/2022 221027-112 27083480 ES4</small>									
								Component	LOD/Units	Method			
								EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35	M	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH106			
M	mCERTS accredited.		F-9LTGWB-4MX6			
aq	Aqueous / settled sample.		0.40 - 0.40			
diss.filt	Dissolved / filtered sample.		Soil/Solid (S)			
tot.unfilt	Total / unfiltered sample.		21/10/2022			
*	Subcontracted - refer to subcontractor report for accreditation status.		09:22			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		25/10/2022			
(F)	Trigger breach confirmed		221027-112			
1-4*\$@	Sample deviation (see appendix)		27083480			
			ES4			
Component	LOD/Units	Method				
Naphthalene-d8 % recovery**	%	TM218	79			
Acenaphthene-d10 % recovery**	%	TM218	80.5			
Phenanthrene-d10 % recovery**	%	TM218	58			
Chrysene-d12 % recovery**	%	TM218	30.7			
Perylene-d12 % recovery**	%	TM218	15.2			
Naphthalene	<9 µg/kg	TM218	<9	M		
Acenaphthylene	<12 µg/kg	TM218	<12	M		
Acenaphthene	<8 µg/kg	TM218	<8	M		
Fluorene	<10 µg/kg	TM218	<10	M		
Phenanthrene	<15 µg/kg	TM218	<15	M		
Anthracene	<16 µg/kg	TM218	<16	M		
Fluoranthene	<17 µg/kg	TM218	<17	M		
Pyrene	<15 µg/kg	TM218	<15	M		
Benz(a)anthracene	<14 µg/kg	TM218	<14	M		
Chrysene	<10 µg/kg	TM218	<10	M		
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	M		
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M		
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M		
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M		
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M		
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M		
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.		BH106											
#	ISO17025 accredited.		Depth (m)	F-9LTGWB-4MX6											
M	mCERTS accredited.			0.40 - 0.40											
aq	Aqueous / settled sample.			Soil/Solid (S)											
diss.filt	Dissolved / filtered sample.			21/10/2022											
tot.unfilt	Total / unfiltered sample.			Date Sampled		25/10/2022									
* Subcontracted - refer to subcontractor report for accreditation status.				Sample Type		221027-112									
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				Date Received		27083480									
(F) Trigger breach confirmed		SDG Ref		ES4											
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)													
		AGS Reference													
Component	LOD/Units	Method													
Dibromofluoromethane**	%	TM116	110												
Toluene-d8**	%	TM116	100												
4-Bromofluorobenzene**	%	TM116	89.4												
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200												
						M									
Benzene	<9 µg/kg	TM116	<180												
						M									
Toluene	<7 µg/kg	TM116	<140												
						M									
Ethylbenzene	<4 µg/kg	TM116	<80												
						M									
p/m-Xylene	<10 µg/kg	TM116	<200												
						#									
o-Xylene	<10 µg/kg	TM116	<200												
						M									
Sum of BTEX	<40 µg/kg	TM116	<800												



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&§@ Sample deviation (see appendix)

Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
07/11/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Cust. Sample Ref.	BH106E54
Depth (m)	0.40 - 0.40
Sample Type	SOLID
Date Sampled	21/10/2022 00:00:00
Date Received	25/10/2022 05:00:00
SDG	221027-112
Original Sample	27083480
Method Number	TM048



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 221027-112
Client Ref.: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27083480
Customer Sample Ref.	BH106
AGS Ref.	ES4
Depth	0.40 - 0.40
Type	Soil/Solid (S)

Ammonium Soil by Titration	02-Nov-2022
Anions by Kone (soil)	02-Nov-2022
Asbestos ID in Solid Samples	08-Nov-2022
Chromium III	04-Nov-2022
Cyanide Comp/Free/Total/Thiocyanate	04-Nov-2022
Easily Liberated Sulphide	03-Nov-2022
Elemental Sulphur	04-Nov-2022
EPH	02-Nov-2022
EPH by GCxGC-FID	02-Nov-2022
GRO by GC-FID (S)	01-Nov-2022
Hexavalent Chromium (s)	01-Nov-2022
Metals in solid samples by OES	04-Nov-2022
NO3, NO2 and TON by KONE (s)	02-Nov-2022
PAH by GCMS	04-Nov-2022
pH	07-Nov-2022
Phenols by HPLC (S)	01-Nov-2022
Sample description	28-Oct-2022
Total Organic Carbon	04-Nov-2022
Total Sulphate	02-Nov-2022
VOC MS (S)	01-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221027-112
Client Ref: F212561

Report Number: 667582
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221027-113
Your Reference:	F212561
Location:	Keadby 3
Report No:	667382
Order Number:	386/121917/CP

We received 4 samples on Wednesday October 26, 2022 and 3 of these samples were scheduled for analysis which was completed on Monday November 07, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

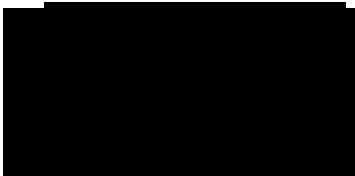
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27083597	BH106	ES9	1.80 - 1.80	21/10/2022
27083575	BH106	ES13	2.80 - 2.80	21/10/2022
27083583	BH106	ES17	3.80 - 3.80	21/10/2022
27083590	BH106	ES21	4.30 - 4.30	21/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27083597	BH106	ES9	1.80 - 1.80	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
	27083575	BH106	ES13	2.80 - 2.80	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
	27083590	BH106	ES21	4.30 - 4.30	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 3			X	X	X	
Anions by Kone (soil)	All	NDPs: 0 Tests: 3			X	X	X	
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3			X	X	X	
Chromium III	All	NDPs: 0 Tests: 3			X	X	X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3			X	X	X	
Easily Liberated Sulphide	All	NDPs: 0 Tests: 3			X	X	X	
Elemental Sulphur	All	NDPs: 0 Tests: 3			X	X	X	
EPH	All	NDPs: 0 Tests: 3			X	X	X	
EPH by GCxGC-FID	All	NDPs: 0 Tests: 3			X	X	X	
EPH CWG GC (S)	All	NDPs: 0 Tests: 1					X	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3			X	X	X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 3			X	X	X	
Metals in solid samples by OES	All	NDPs: 0 Tests: 3			X	X	X	
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 3			X	X	X	
PAH by GCMS	All	NDPs: 0 Tests: 3			X	X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	27083597	27083575	27083590		
	Customer Sample Reference	BH106	BH106	BH106		
	AGS Reference	ES9	ES13	ES21		
	Depth (m)	1.80 - 1.80	2.80 - 2.80	4.30 - 4.30		
	Container	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	1kg TUB with Handle (ALE260)	250g Amber Jar (ALE210)	60g VOC (ALE215)
	Sample Type	S	S	S	S	
	pH	All	NDPs: 0 Tests: 3	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X	
Sample description	All	NDPs: 0 Tests: 3	X	X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X	
Total Sulphate	All	NDPs: 0 Tests: 3	X	X	X	
TPH CWG GC (S)	All	NDPs: 0 Tests: 1			X	
VOC MS (S)	All	NDPs: 0 Tests: 3	X	X	X	



CERTIFICATE OF ANALYSIS

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Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27083575	BH106	2.80 - 2.80	Dark Brown	Sand	None	None
27083590	BH106	4.30 - 4.30	Dark Brown	Sand	None	None
27083597	BH106	1.80 - 1.80	Dark Brown	Silty Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH106	BH106	BH106		
#	ISO17025 accredited.		F-XB0HWB-9LGM	F-AJ0HWB-BQ0C	F-HM0HWB-5AE8		
M	mCERTS accredited.		1.80 - 1.80	2.80 - 2.80	4.30 - 4.30		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.fltr	Dissolved / filtered sample.	Sample Type	21/10/2022	21/10/2022	21/10/2022		
tot.unfltr	Total / unfiltered sample.	Date Sampled	12:07	12:11	12:13		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	26/10/2022	26/10/2022	26/10/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221027-113	221027-113	221027-113		
	(F) Trigger breach confirmed	SDG Ref	27083597	27083575	27083590		
	1-4*§ Sample deviation (see appendix)	Lab Sample No.(s)	ES9	ES13	ES21		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	25	13	14		
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15 M	<15 M	<15 M		
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12 M	<12 M	<12 M		
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M		
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 M	<0.035 M	<0.035 M		
Soil Organic Matter (SOM)	<0.35 %	TM132	7.38 #	0.74 #	0.791 #		
pH	1 pH Units	TM133	8.42 M	8.67 M	8.26 M		
Sulphur, Elemental	<10 mg/kg	TM136	<10 M	<10 M	<10 M		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6 M	<0.6 M	<0.6 M		
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Cyanide, Free	<1 mg/kg	TM153	<1 M	<1 M	<1 M		
Sulphide, Easily liberated	<15 mg/kg	TM180	<15 @ M	<15 @ M	<15 @ M		
Chromium, Trivalent	<0.9 mg/kg	TM181	20.9	10.4	7.94		
Arsenic	<0.6 mg/kg	TM181	41.6 M	7.19 M	1.65 M		
Boron	<0.7 mg/kg	TM181	17.1 #	7.17 #	4.67 #		
Cadmium	<0.02 mg/kg	TM181	0.022 M	0.0999 M	0.122 M		
Chromium	<0.9 mg/kg	TM181	20.9 M	10.4 M	7.94 M		
Copper	<1.4 mg/kg	TM181	82.3 M	23.8 M	7.28 M		
Iron	<1000 mg/kg	TM181	29200 #	13100 #	6060 #		
Lead	<0.7 mg/kg	TM181	19.2 M	7.85 M	7.19 M		
Mercury	<0.1 mg/kg	TM181	<0.1 M	<0.1 M	<0.1 M		
Nickel	<0.2 mg/kg	TM181	30.3 M	13.5 M	9.37 M		
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #		
Zinc	<1.9 mg/kg	TM181	31.7 M	22.5 M	34.5 M		
Sulphate, Total	<48 mg/kg	TM221	513 M	291 M	128 M		
Total Sulphur (ASB)	<0.0016 %	TM221	0.0171	0.00969	0.00426		
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.38	0.33	<0.1		
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0342 M	0.0356 M	0.0362 M		
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	<1	<1	<1		
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35	<35		
EPH Surrogate % recovery**	%	TM415	103	109	99		



CERTIFICATE OF ANALYSIS

SDG: 221027-113

Report Number: 667382

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend		Customer Sample Ref.					
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$\$ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH106 F-XB0HWB-9LGM 1.80 - 1.80 Soil/Solid (S) 21/10/2022 12:07 26/10/2022 221027-113 27083597 ES9	BH106 F-AJ0HWB-BQ0C 2.80 - 2.80 Soil/Solid (S) 21/10/2022 12:11 26/10/2022 221027-113 27083575 ES13	BH106 F-HM0HWB-5AE8 4.30 - 4.30 Soil/Solid (S) 21/10/2022 12:13 26/10/2022 221027-113 27083590 ES21			
Component	LOD/Units	Method					
EPH>C10-C40 (EH_2D_Total)	<35 mg/kg	TM415	<35 M	<35 M	<35 M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	BH106		
# ISO17025 accredited.	M mCERTS accredited.		F-XB0HWB-9LGM	F-AJ0HWB-BQ0C	F-HM0HWB-5AE8
aq Aqueous / settled sample.	dis.s.filt Dissolved / filtered sample.	tot.unfilt Total / unfiltered sample.	1.80 - 1.80	2.80 - 2.80	4.30 - 4.30
* Subcontracted - refer to subcontractor report for accreditation status.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			21/10/2022	21/10/2022	21/10/2022
(F) Trigger breach confirmed			12:07	12:11	12:13
1-4*§@ Sample deviation (see appendix)			26/10/2022	26/10/2022	26/10/2022
			221027-113	221027-113	221027-113
			27083597	27083575	27083590
			ES9	ES13	ES21
			AGS Reference		
Component	LOD/Units	Method			
Naphthalene-d8 % recovery**	%	TM218	85.4	88	91.2
Acenaphthene-d10 % recovery**	%	TM218	85.6	89.1	90.1
Phenanthrene-d10 % recovery**	%	TM218	75.6	86.3	95.2
Chrysene-d12 % recovery**	%	TM218	65.8	77	111
Perylene-d12 % recovery**	%	TM218	47.9	74.2	111
Naphthalene	<9 µg/kg	TM218	<9	11.5	<9
			M	M	M
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12
			M	M	M
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8
			M	M	M
Fluorene	<10 µg/kg	TM218	<10	<10	<10
			M	M	M
Phenanthrene	<15 µg/kg	TM218	<15	<15	<15
			M	M	M
Anthracene	<16 µg/kg	TM218	<16	<16	<16
			M	M	M
Fluoranthene	<17 µg/kg	TM218	<17	<17	<17
			M	M	M
Pyrene	<15 µg/kg	TM218	<15	<15	<15
			M	M	M
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14	<14
			M	M	M
Chrysene	<10 µg/kg	TM218	<10	<10	<10
			M	M	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15	<15
			M	M	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14	<14
			M	M	M
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15	<15
			M	M	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18	<18
			M	M	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23
			M	M	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24	<24
			M	M	M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118	<118



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

TPH CWG (S)

Results Legend		Customer Sample Ref.	BH106				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-HM0HWB-5AE8				
M	mCERTS accredited.		4.30 - 4.30				
aq	Aqueous / settled sample.		Soil/Solid (S)				
diss.filt	Dissolved / filtered sample.		21/10/2022				
tot.unfilt	Total / unfiltered sample.		12:13				
	* Subcontracted - refer to subcontractor report for accreditation status.		26/10/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221027-113				
(F)	Trigger breach confirmed		27083590				
1-4*§	Sample deviation (see appendix)		ES21				
Component	LOD/Units		Method				
GRO Surrogate % recovery**	%	TM089	98.3				
Aliphatics >C5-C6 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C6-C8 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C8-C10 (HS_1D_AL)	<10 µg/kg	TM089	<10				
Aliphatics >C10-C12 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C12-C16 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C16-C21 (EH_2D_AL_#1)	<1000 µg/kg	TM414	<1000	#			
Aliphatics >C21-C35 (EH_2D_AL_#1)	<1000 µg/kg	TM414	2300	#			
Aliphatics >C35-C44 (EH_2D_AL_#1)	<1000 µg/kg	TM414	1980				
Total Aliphatics >C10-C44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	<5000				
Total Aliphatics & Aromatics >C10-C44 (EH_2D_Total_#1)	<10000 µg/kg	TM414	<10000				
Aromatics >EC5-EC7 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics >EC7-EC8 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics >EC8-EC10 (HS_1D_AR)	<10 µg/kg	TM089	<10				
Aromatics > EC10-EC12 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC12-EC16 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC16-EC21 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000	#			
Aromatics > EC21-EC35 (EH_2D_AR_#1)	<1000 µg/kg	TM414	3150	#			
Aromatics >EC35-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	1640				
Aromatics > EC40-EC44 (EH_2D_AR_#1)	<1000 µg/kg	TM414	<1000				
Total Aromatics > EC10-EC44 (EH_2D_AR_#1)	<5000 µg/kg	TM414	5110				
Total Aliphatics & Aromatics >C5-C44 (EH_2D_Total_#1+HS_1D_Total)	<10000 µg/kg	TM414	<10000				
Total Aliphatics >C5-C10 (HS_1D_AL_TOTAL)	<50 µg/kg	TM089	<50				
Total Aromatics >EC5-EC10 (HS_1D_AR_TOTAL)	<50 µg/kg	TM089	<50				
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

VOC MS (S)

Results Legend		Customer Sample Ref.	BH106	BH106	BH106		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-XB0HWB-9LGM 1.80 - 1.80 Soil/Solid (S) 21/10/2022 12:07 26/10/2022 221027-113 27083597 ES9	F-AJ0HWB-BQ0C 2.80 - 2.80 Soil/Solid (S) 21/10/2022 12:11 26/10/2022 221027-113 27083575 ES13	F-HM0HWB-5AE8 4.30 - 4.30 Soil/Solid (S) 21/10/2022 12:13 26/10/2022 221027-113 27083590 ES21		
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM116	112	121	117		
Toluene-d8**	%	TM116	99.7	102	98.9		
4-Bromofluorobenzene**	%	TM116	85.4	75.3	71.5		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M	<10 M	<10 M		
Benzene	<9 µg/kg	TM116	<180 M	<9 M	<9 M		
Toluene	<7 µg/kg	TM116	<140 M	<7 M	<7 M		
Ethylbenzene	<4 µg/kg	TM116	<80 M	<4 M	<4 M		
p/m-Xylene	<10 µg/kg	TM116	<200 #	<10 #	<10 #		
o-Xylene	<10 µg/kg	TM116	<200 M	<10 M	<10 M		
Sum of Detected Xylenes	<0.02 mg/kg	TM116			<0.02		
Sum of BTEX	<40 µg/kg	TM116	<800	<40	<40		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH106ES9 1.80 - 1.80 SOLID 21/10/2022 00:00:00 26/10/2022 05:00:00 221027-113 27083597 TM048	03/11/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH106ES13 2.80 - 2.80 SOLID 21/10/2022 00:00:00 26/10/2022 05:00:00 221027-113 27083575 TM048	03/11/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH106ES21 4.30 - 4.30 SOLID 21/10/2022 00:00:00 26/10/2022 05:00:00 221027-113 27083590 TM048	03/11/22	Eva Guerra	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM414	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221027-113
Client Ref.: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27083575	27083590	27083597
Customer Sample Ref.	BH106	BH106	BH106
AGS Ref.	ES13	ES21	ES9
Depth	2.80 - 2.80	4.30 - 4.30	1.80 - 1.80
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammonium Soil by Titration	02-Nov-2022	02-Nov-2022	02-Nov-2022
Anions by Kone (soil)	02-Nov-2022	02-Nov-2022	02-Nov-2022
Asbestos ID in Solid Samples	03-Nov-2022	03-Nov-2022	03-Nov-2022
Chromium III	04-Nov-2022	04-Nov-2022	04-Nov-2022
Cyanide Comp/Free/Total/Thiocyanate	03-Nov-2022	03-Nov-2022	03-Nov-2022
Easily Liberated Sulphide	03-Nov-2022	03-Nov-2022	03-Nov-2022
Elemental Sulphur	04-Nov-2022	04-Nov-2022	04-Nov-2022
EPH	02-Nov-2022	04-Nov-2022	04-Nov-2022
EPH by GCxGC-FID	02-Nov-2022	02-Nov-2022	02-Nov-2022
EPH CWG GC (S)		02-Nov-2022	
GRO by GC-FID (S)	31-Oct-2022	31-Oct-2022	31-Oct-2022
Hexavalent Chromium (s)	01-Nov-2022	01-Nov-2022	01-Nov-2022
Metals in solid samples by OES	04-Nov-2022	04-Nov-2022	04-Nov-2022
NO3, NO2 and TON by KONE (s)	02-Nov-2022	02-Nov-2022	02-Nov-2022
PAH by GCMS	02-Nov-2022	02-Nov-2022	04-Nov-2022
pH	07-Nov-2022	07-Nov-2022	07-Nov-2022
Phenols by HPLC (S)	01-Nov-2022	01-Nov-2022	02-Nov-2022
Sample description	28-Oct-2022	29-Oct-2022	29-Oct-2022
Total Organic Carbon	04-Nov-2022	04-Nov-2022	04-Nov-2022
Total Sulphate	02-Nov-2022	02-Nov-2022	02-Nov-2022
TPH CWG GC (S)		02-Nov-2022	
VOC MS (S)	31-Oct-2022	31-Oct-2022	31-Oct-2022



CERTIFICATE OF ANALYSIS

SDG: 221027-113
Client Ref: F212561

Report Number: 667382
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	22 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221103-45
Your Reference:	F212561
Location:	Keadby 3
Report No:	669347
Order Number:	386/121917/CP

This report has been revised and directly supersedes 668376 in its entirety.

We received 3 samples on Thursday November 03, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday November 22, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

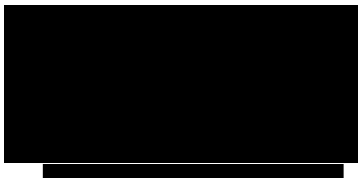
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27112020	HR-BH01	ES2	0.10 - 0.10	27/10/2022
27112029	HR-BH01	ES5	0.70 - 0.70	27/10/2022
27112040	HR-BH01	ES7	1.20 - 1.20	27/10/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27112020	HR-BH01	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	S
		27112029	HR-BH01	ES5	0.70 - 0.70	1kg TUB with Handle (ALE260)	S
		27112040	HR-BH01	ES7	1.20 - 1.20	250g Amber Jar (ALE210)	S
						60g VOC (ALE215)	S
						250g Amber Jar (ALE210)	S
Acid herbicides*	All	NDPs: 0 Tests: 1					
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2					
Anions by Kone (soil)	All	NDPs: 0 Tests: 2					
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2					
Chromium III	All	NDPs: 0 Tests: 2					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2					
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2					
Elemental Sulphur	All	NDPs: 0 Tests: 2					
EPH	All	NDPs: 0 Tests: 2					
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2					
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2					
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2					
Metals in solid samples by OES	All	NDPs: 0 Tests: 2					
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2					
OC OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 1					



CERTIFICATE OF ANALYSIS

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SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container			Sample Type
					27112020	27112029	27112040	
		HR-BH01	ES2	0.10 - 0.10	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
		HR-BH01	ES5	0.70 - 0.70	1kg TUB with Handle (ALE260)	1kg TUB with Handle (ALE260)	60g VOC (ALE215)	S
		HR-BH01	ES7	1.20 - 1.20	250g Amber Jar (ALE210)	250g Amber Jar (ALE210)	60g VOC (ALE215)	S
PAH by GCMS	All	NDPs: 0 Tests: 2				X		X
pH	All	NDPs: 0 Tests: 2				X		X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2				X		X
Sample description	All	NDPs: 0 Tests: 3			X	X		X
Total Organic Carbon	All	NDPs: 0 Tests: 2				X		X
Total Sulphate	All	NDPs: 0 Tests: 2				X		X
VOC MS (S)	All	NDPs: 0 Tests: 2					X	X



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27112020	HR-BH01	0.10 - 0.10	Dark Brown	Sandy Clay Loam	Stones	Vegetation
27112029	HR-BH01	0.70 - 0.70	Light Brown	Sandy Loam	Stones	None
27112040	HR-BH01	1.20 - 1.20	Light Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Results Legend		Customer Sample Ref.	HR-BH01	HR-BH01	HR-BH01		
#	ISO17025 accredited.		F-MR8SWB-NJK	F-HS8SWB-Z6FA	F-VS8SWB-PS0Y		
M	mCERTS accredited.		0.10 - 0.10	0.70 - 0.70	1.20 - 1.20		
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		
diss.filt	Dissolved / filtered sample.	Sample Type	27/10/2022	27/10/2022	27/10/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:45	15:02	15:10		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/11/2022	03/11/2022	03/11/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221103-45	221103-45	221103-45		
(F)	Trigger breach confirmed	SDG Ref	27112020	27112029	27112040		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	ES2	ES5	ES7		
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	19	15	12		
2,4,5-T*	<0.01 mg/kg	SUB	<0.01				
2,4,5-TP (Fenoprop)*	<0.01 mg/kg	SUB	<0.01				
2,4-D*	<0.01 mg/kg	SUB	<0.01				
2,4-DB*	<0.01 mg/kg	SUB	<0.01				
2,4-Dichloroprop (2,4 DP)*	<0.01 mg/kg	SUB	<0.01				
4-Chlorophenoxyacetic acid (4-CPA)*	<0.01 mg/kg	SUB	<0.01				
Acifluorfen*	<0.01 mg/kg	SUB	<0.01				
Bentazone*	<0.01 mg/kg	SUB	<0.01				
Bromoxynil*	<0.01 mg/kg	SUB	<0.01				
Dicamba*	<0.01 mg/kg	SUB	<0.01				
Diclofop*	<0.01 mg/kg	SUB	<0.01				
Dinoseb*	<0.01 mg/kg	SUB	<0.01				
DNOC*	<0.01 mg/kg	SUB	<0.01				
Fluroxypyr*	<0.01 mg/kg	SUB	<0.01				
loxynil*	<0.01 mg/kg	SUB	<0.01				
2-methyl-4-Chlorophenoxyacetic acid (MCPA)*	<0.01 mg/kg	SUB	<0.01				
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.01 mg/kg	SUB	<0.01				
Mecoprop (MCP)*	<0.01 mg/kg	SUB	<0.01				
Propoxycarbazone-sodium*	<0.01 mg/kg	SUB	<0.01				
Triclopyr*	<0.01 mg/kg	SUB	<0.01				
Triclosan*	<0.01 mg/kg	SUB	<0.01				
Exchangeable Ammonia as NH4	<15 mg/kg	TM024		<15	<15		
				M	M		
Exchangeable Ammonia as N	<12 mg/kg	TM024		<12	<12		
				M	M		
Phenol	<0.01 mg/kg	TM062 (S)		<0.01	<0.01		
				M	M		
Cresols	<0.01 mg/kg	TM062 (S)		<0.01	<0.01		
				M	M		
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015	<0.015		
				M	M		
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035	<0.035		
				M	M		
Soil Organic Matter (SOM)	<0.35 %	TM132		1.31	1.02		
				#	#		
pH	1 pH Units	TM133		8.28	8.3		
				M	M		
Sulphur, Elemental	<10 mg/kg	TM136		11.1	<10		
				M	M		
Chromium, Hexavalent	<0.6 mg/kg	TM151		<0.6	<0.6		
				M	M		
Cyanide, Total	<1 mg/kg	TM153		<1	<1		
				M	M		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

#	ISO17025 accredited.	Customer Sample Ref.			HR-BH01	HR-BH01	HR-BH01
M	mCERTS accredited.	F-MR8SWB-NJK	F-HS8SWB-Z6FA	F-VS8SWB-PSOY	0.10 - 0.10	0.70 - 0.70	1.20 - 1.20
sq	Aqueous / settled sample.	0.10 - 0.10	0.70 - 0.70	1.20 - 1.20	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
diss.filt	Dissolved / filtered sample.	27/10/2022	27/10/2022	27/10/2022	27/10/2022	27/10/2022	27/10/2022
tot.unfilt	Total / unfiltered sample.	14:45	15:02	15:10	27/11/2022	03/11/2022	03/11/2022
*	Subcontracted - refer to subcontractor report for accreditation status.	221103-45	221103-45	221103-45	27112020	27112029	27112040
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	ES2	ES5	ES7	SDG Ref	Lab Sample No.(s)	AGS Reference
(F)	Trigger breach confirmed						
1-4*\$@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
Cyanide, Free	<1 mg/kg	TM153		<1	M	M	
Sulphide, Easily liberated	<15 mg/kg	TM180		<15	@ M	@ M	
Chromium, Trivalent	<0.9 mg/kg	TM181		9.86		11.8	
Arsenic	<0.6 mg/kg	TM181		6.87	M	7.4	M
Boron	<0.7 mg/kg	TM181		8.19	#	9.49	#
Cadmium	<0.02 mg/kg	TM181		0.137	M	0.177	M
Chromium	<0.9 mg/kg	TM181		9.86	M	11.8	M
Copper	<1.4 mg/kg	TM181		11.3	M	12.8	M
Iron	<1000 mg/kg	TM181		14400	#	19000	#
Lead	<0.7 mg/kg	TM181		24.6	M	23.4	M
Mercury	<0.1 mg/kg	TM181		<0.1	M	<0.1	M
Nickel	<0.2 mg/kg	TM181		13.4	M	16	M
Selenium	<1 mg/kg	TM181		<1	#	<1	#
Zinc	<1.9 mg/kg	TM181		45	M	55.8	M
Sulphate, Total	<48 mg/kg	TM221		284	M	293	M
Total Sulphur (ASB)	<0.0016 %	TM221		0.00948		0.00978	
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243		0.23		0.15	
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243		0.0329	M	0.0717	M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243		39.6		16.1	
EPH (C5-C40)	<35 mg/kg	TM415		<35		40	
EPH Surrogate % recovery**	%	TM415		102		103	
EPH >C10-C40 (EH_2D_Total)	<35 mg/kg	TM415		<35	M	40	M



CERTIFICATE OF ANALYSIS

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

GRO by GC-FID (S)

Results Legend		Customer Sample Ref.	HR-BH01	HR-BH01			
#	ISO17025 accredited.		F-HS8SWB-Z6FA	F-VS8SWB-PS0Y			
M	mCERTS accredited.		0.70 - 0.70	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/10/2022	27/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:02	15:10			
	*	Sample Time	03/11/2022	03/11/2022			
	**	Date Received	221103-45	221103-45			
		SDG Ref	27112029	27112040			
	(F)	Lab Sample No.(s)	ES5	ES7			
	1-4*#@	AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10 (HS_1D_TOTAL)	<20 µg/kg	TM089	<20	<20			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

OC OP Pesticides and Triazine Herb

Table with columns: Results Legend, Customer Sample Ref., Component, LOD/Units, Method, and data rows for various pesticides like Dichlorvos, Mevinphos, Phorate, etc.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

PAH by GCMS

Results Legend		Customer Sample Ref.	HR-BH01	HR-BH01			
#	ISO17025 accredited.		F-HS8SWB-Z6FA	F-VS8SWB-PS0Y			
M	mCERTS accredited.		0.70 - 0.70	1.20 - 1.20			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	27/10/2022	27/10/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:02	15:10			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/11/2022	03/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221103-45	221103-45			
	(F) Trigger breach confirmed	SDG Ref	27112029	27112040			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	ES5	ES7			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	87.4	81.6			
Acenaphthene-d10 % recovery**	%	TM218	91.5	88.9			
Phenanthrene-d10 % recovery**	%	TM218	94.2	87.8			
Chrysene-d12 % recovery**	%	TM218	90.9	85.5			
Perylene-d12 % recovery**	%	TM218	90.4	81.8			
Naphthalene	<9 µg/kg	TM218	27.2	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	25.4	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	25.8	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	272	28.1			
			M	M			
Anthracene	<16 µg/kg	TM218	76.7	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	303	51			
			M	M			
Pyrene	<15 µg/kg	TM218	260	46			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	127	26.8			
			M	M			
Chrysene	<10 µg/kg	TM218	119	32.7			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	131	40.3			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	49.1	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	94.3	25.4			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	55.4	21.5			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	52.7	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1620	272			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*§@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	HR-BH01ES5 0.70 - 0.70 SOLID 27/10/2022 00:00:00 03/11/2022 05:00:00 221103-45 27112029 TM048	14/11/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	HR-BH01ES7 1.20 - 1.20 SOLID 27/10/2022 00:00:00 03/11/2022 05:00:00 221103-45 27112040 TM048	14/11/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-45
Client Ref.: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Test Completion Dates

Lab Sample No(s)	27112020	27112029	27112040
Customer Sample Ref.	HR-BH01	HR-BH01	HR-BH01
AGS Ref.	ES2	ES5	ES7
Depth	0.10 - 0.10	0.70 - 0.70	1.20 - 1.20
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)

Acid herbicides*	22-Nov-2022		
Ammonium Soil by Titration		09-Nov-2022	09-Nov-2022
Anions by Kone (soil)		09-Nov-2022	09-Nov-2022
Asbestos ID in Solid Samples		14-Nov-2022	14-Nov-2022
Chromium III		10-Nov-2022	10-Nov-2022
Cyanide Comp/Free/Total/Thiocyanate		09-Nov-2022	09-Nov-2022
Easily Liberated Sulphide		10-Nov-2022	10-Nov-2022
Elemental Sulphur		10-Nov-2022	10-Nov-2022
EPH		10-Nov-2022	07-Nov-2022
EPH by GCxGC-FID		08-Nov-2022	07-Nov-2022
GRO by GC-FID (S)		07-Nov-2022	07-Nov-2022
Hexavalent Chromium (s)		10-Nov-2022	08-Nov-2022
Metals in solid samples by OES		10-Nov-2022	10-Nov-2022
NO3, NO2 and TON by KONE (s)		09-Nov-2022	09-Nov-2022
OC OP Pesticides and Triazine Herb	08-Nov-2022		
PAH by GCMS		09-Nov-2022	08-Nov-2022
pH		09-Nov-2022	09-Nov-2022
Phenols by HPLC (S)		07-Nov-2022	07-Nov-2022
Sample description	03-Nov-2022	03-Nov-2022	03-Nov-2022
Total Organic Carbon		11-Nov-2022	11-Nov-2022
Total Sulphate		10-Nov-2022	10-Nov-2022
VOC MS (S)		04-Nov-2022	04-Nov-2022



CERTIFICATE OF ANALYSIS

Work Order	: PR22B4077	Issue Date	: 21-Nov-2022
Customer	: ALS Laboratories (UK) Limited	Laboratory	: ALS Czech Republic, s.r.o.
Contact	: ALS Hawarden Reporting	Contact	: Client Service
Address	: Unit 7-8 Hawarden Business Park Manor Road, Hawarden CH5 3US Deeside	Address	: Na Harfe 336/9 Prague 9 - Vysocany 190 00 Czech Republic
E-mail	: [REDACTED]@ALSGlobal.com	E-mail	: customer.support@alsglobal.com
Telephone	: ----	Telephone	: +420 226 226 228
Project	: 221103-45	Page	: 1 of 2
Order number	: ----	Date Samples Received	: 11-Nov-2022
		Quote number	: PR2022ALSEC-GB0002 (CZ-256-18-0022)
Site	: ----	Date of test	: 11-Nov-2022 - 21-Nov-2022
Sampled by	: client	QC Level	: ALS CR Standard Quality Control Schedule

General Comments

This report shall not be reproduced except in full, without prior written approval from the laboratory.

The laboratory declares that the test results relate only to the listed samples. If the section "Sampled by" of the Certificate of analysis states: "Sampled by Customer" then the results relate to the sample as received.

Responsible for accuracy

Testing Laboratory No. 1163
Accredited by CAI according to
CSN EN ISO/IEC 17025:2018

Signatories

Lubomír Pokorný

Position

Country Manager



The company is certified according to ČSN EN ISO 14001 (Environmental management systems) and ČSN ISO 45001 (Occupational health and safety management systems)



Analytical Results

Sub-Matrix: SOIL

Client sample ID

27112799

HR-BH01

Laboratory sample ID

PR22B4077001

Client sampling date / time

03-Nov-2022 10:32

Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU
Physical Parameters									
Dry matter @ 105°C	S-DRY-GRCI	0.10	%	80.2	± 6.0%	----	----	----	----
Pesticides									
2.4.5-T	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4.5-TP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-D	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
2.4-DP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
4-CPP	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bentazone	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dinoseb	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Fluroxypyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPA	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPB	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
MCPP (isomers)	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Acifluorfen	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Bromoxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
DNOC	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Dicamba	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Diclofop	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
loxynil	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Propoxycarbazone-sodium	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclopyr	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----
Triclosan	S-PESLMSA1	0.0100	mg/kg DW	<0.0100	----	----	----	----	----

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Measurement uncertainty is expressed as expanded measurement uncertainty with coverage factor $k = 2$, representing 95% confidence level.

Key: LOR = Limit of reporting; MU = Measurement Uncertainty. The MU does not include sampling uncertainty.

The end of result part of the certificate of analysis

Brief Method Summaries

Analytical Methods	Method Descriptions
Location of test performance: Na Harfe 336/9 Prague 9 - Vysocany Czech Republic 190 00	
S-DRY-GRCI	CZ_SOP_D06_01_045 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007), CZ_SOP_D06_07_046 (CSN ISO 11465, CSN EN 12880, CSN EN 14346:2007, CSN 46 5735) Determination of dry matter by gravimetry and determination of moisture by calculation from measured values.
S-PESLMSA1	CZ_SOP_D06_03_182.B (CSN EN 15637, US EPA 1694) Determination of acidic herbicides and drug residues by liquid chromatography method with MS/MS detection.

The symbol "*" for the method indicates a test outside the scope of accreditation of the laboratory or subcontractor. If the UNICO-SUB code is stated in the method table, this only informs that the tests have been performed by a subcontractor and the results are given in an annex to the test report, including information on test accreditation. If the lab used for matrix outside the scope of accreditation or non-standard sample matrix procedure specified in the accredited method and issues non-accredited results, this fact is stated on the title page of this protocol in the section "Notes". If the test report shows the results of subcontracting, the place of performance of the test is outside the laboratories of ALS Czech Republic, s.r.o.

The method for calculating of the summation parameters is available on request in the customer service.



CERTIFICATE OF ANALYSIS

SDG: 221103-45
Client Ref: F212561

Report Number: 669347
Location: Keadby 3

Superseded Report: 668376

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	14 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221103-55
Your Reference:	F212561
Location:	Keadby 3
Report No:	668391
Order Number:	386/121917/CP

We received 9 samples on Thursday November 03, 2022 and 2 of these samples were scheduled for analysis which was completed on Monday November 14, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-55
Client Ref.: F212561

Report Number: 668391
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27112598	DS101	ES101	0.10 - 0.10	01/11/2022
27112607	DS101	ES104	0.40 - 0.40	01/11/2022
27112616	DS101	ES107	0.90 - 0.90	01/11/2022
27112623	DS101	ES108	1.20 - 1.20	01/11/2022
27112630	DS101	ES109	1.65 - 2.00	01/11/2022
27112643	DS101	ES110	2.50 - 3.00	01/11/2022
27112652	DS101	ES111	3.50 - 4.00	01/11/2022
27112662	DS101	ES112	4.50 - 5.00	01/11/2022
27112596	NO ID			

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-55
Client Ref.: F212561

Report Number: 668391
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27112843	DS101	ES110	2.50 - 3.00	60g VOC (ALE215)	S
		27112862	DS101	ES112	4.50 - 5.00	250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
						250g Amber Jar (ALE210)	S
						1kg TUB with Handle (ALE260)	S
Ammonium Soil by Titration	All	NDPs: 0 Tests: 2	X		X		
Anions by Kone (soil)	All	NDPs: 0 Tests: 2	X		X		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 2		X	X		
Chromium III	All	NDPs: 0 Tests: 2	X		X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	X		X		
Easily Liberated Sulphide	All	NDPs: 0 Tests: 2	X		X		
Elemental Sulphur	All	NDPs: 0 Tests: 2	X		X		
EPH	All	NDPs: 0 Tests: 2	X		X		
EPH by GCxGC-FID	All	NDPs: 0 Tests: 2	X		X		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 2		X		X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 2	X		X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 2	X		X		
NO3, NO2 and TON by KONE (s)	All	NDPs: 0 Tests: 2	X		X		
PAH by GCMS	All	NDPs: 0 Tests: 2	X		X		
pH	All	NDPs: 0 Tests: 2	X		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-55
Client Ref.: F212561

Report Number: 668391
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	27112643	DS101	ES110	2.50 - 3.00	60g VOC (ALE215)	S
	27112662	DS101	ES112	4.50 - 5.00	250g Amber Jar (ALE210)	S
	1kg TUB with Handle (ALE260)	S	60g VOC (ALE215)	S	1kg TUB with Handle (ALE260)	S
	250g Amber Jar (ALE210)	S	60g VOC (ALE215)	S	1kg TUB with Handle (ALE260)	S
	1kg TUB with Handle (ALE260)	S	60g VOC (ALE215)	S	1kg TUB with Handle (ALE260)	S
	60g VOC (ALE215)	S	60g VOC (ALE215)	S	1kg TUB with Handle (ALE260)	S
Phenols by HPLC (S)	All	NDPs: 0 Tests: 2	X	X		
Sample description	All	NDPs: 0 Tests: 2	X	X		
Total Organic Carbon	All	NDPs: 0 Tests: 2	X	X		
Total Sulphate	All	NDPs: 0 Tests: 2	X	X		
VOC MS (S)	All	NDPs: 0 Tests: 2		X		X



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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27112643	DS101	2.50 - 3.00	Grey	Silty Sand	Stones	None
27112662	DS101	4.50 - 5.00	Grey	Silty Sand	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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SDG: 221103-55
Client Ref.: F212561

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Superseded Report:

Results Legend		Customer Sample Ref.	DS101	DS101			
#	ISO17025 accredited.		F-FYN1XB-C99L	F-MYN1XB-PZ11			
M	mCERTS accredited.		2.50 - 3.00	4.50 - 5.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
diss.filt	Dissolved / filtered sample.	Sample Type	01/11/2022	01/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:49	15:49			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/11/2022	03/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221103-55	221103-55			
	(F) Trigger breach confirmed	SDG Ref	27112643	27112662			
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	ES110	ES112			
		AGS Reference					
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	32	32			
Exchangeable Ammonia as NH4	<15 mg/kg	TM024	<15	<15			
			M	M			
Exchangeable Ammonia as N	<12 mg/kg	TM024	<12	<12			
			M	M			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01			
			M	M			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01			
			M	M			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015			
			M	M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035			
			M	M			
Soil Organic Matter (SOM)	<0.35 %	TM132	15.9	2.93			
			#	#			
pH	1 pH Units	TM133	8.77	10.7			
			M	M			
Sulphur, Elemental	<10 mg/kg	TM136	<10	<10			
			M	M			
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6			
			M	M			
Cyanide, Total	<1 mg/kg	TM153	<1	<1			
			M	M			
Cyanide, Free	<1 mg/kg	TM153	<1	<1			
			M	M			
Sulphide, Easily liberated	<15 mg/kg	TM180	<15	<15			
			♦ M	♦ M			
Chromium, Trivalent	<0.9 mg/kg	TM181	17.3	16.7			
			M	M			
Arsenic	<0.6 mg/kg	TM181	63.2	80.3			
			M	M			
Boron	<0.7 mg/kg	TM181	19.2	97.2			
			#	#			
Cadmium	<0.02 mg/kg	TM181	0.117	<0.02			
			M	M			
Chromium	<0.9 mg/kg	TM181	17.3	16.7			
			M	M			
Copper	<1.4 mg/kg	TM181	37.2	63.6			
			M	M			
Iron	<1000 mg/kg	TM181	14100	64800			
			#	#			
Lead	<0.7 mg/kg	TM181	23.6	18.8			
			M	M			
Mercury	<0.1 mg/kg	TM181	<0.1	<0.1			
			M	M			
Nickel	<0.2 mg/kg	TM181	20.2	46.7			
			M	M			
Selenium	<1 mg/kg	TM181	1.59	3.69			
			#	#			
Zinc	<1.9 mg/kg	TM181	28.2	33.8			
			M	M			
Sulphate, Total	<48 mg/kg	TM221	420	3980			
			M	M			
Total Sulphur (ASB)	<0.0016 %	TM221	0.014	0.133			
Nitrite as NO2, 2:1 water soluble	<0.1 mg/kg	TM243	0.36	0.66			
Water Soluble Sulphate as SO4 2:1 Extract	<0.004 g/l	TM243	0.0484	0.367			
			M	M			
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM243	12	11.2			
EPH (C5-C40)	<35 mg/kg	TM415	<35	<35			
EPH Surrogate % recovery**	%	TM415	99.5	104			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-55
Client Ref.: F212561

Report Number: 668391
Location: Keadby 3

Superseded Report:

PAH by GCMS

Results Legend		Customer Sample Ref.	DS101	DS101			
#	ISO17025 accredited.		F-FYN1XB-C99L	F-MYN1XB-PZ11			
M	mCERTS accredited.		2.50 - 3.00	4.50 - 5.00			
aq	Aqueous / settled sample.	Depth (m)	Soil/Solid (S)	Soil/Solid (S)			
dis.s.filt	Dissolved / filtered sample.	Sample Type	01/11/2022	01/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:49	15:49			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/11/2022	03/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221103-55	221103-55			
	(F) Trigger breach confirmed	SDG Ref	27112643	27112662			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	ES110	ES112			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene-d8 % recovery**	%	TM218	67.4	48.3			
Acenaphthene-d10 % recovery**	%	TM218	66.7	44.9			
Phenanthrene-d10 % recovery**	%	TM218	40.1	15			
Chrysene-d12 % recovery**	%	TM218	18.2	1.04			
Perylene-d12 % recovery**	%	TM218	9.16	0.26			
Naphthalene	<9 µg/kg	TM218	<9	<9			
			M	M			
Acenaphthylene	<12 µg/kg	TM218	<12	<12			
			M	M			
Acenaphthene	<8 µg/kg	TM218	<8	<8			
			M	M			
Fluorene	<10 µg/kg	TM218	<10	<10			
			M	M			
Phenanthrene	<15 µg/kg	TM218	<15	<15			
			M	M			
Anthracene	<16 µg/kg	TM218	<16	<16			
			M	M			
Fluoranthene	<17 µg/kg	TM218	<17	<17			
			M	M			
Pyrene	<15 µg/kg	TM218	<15	<15			
			M	M			
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14			
			M	M			
Chrysene	<10 µg/kg	TM218	<10	<10			
			M	M			
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15			
			M	M			
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14			
			M	M			
Benzo(a)pyrene	<15 µg/kg	TM218	<15	<15			
			M	M			
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18			
			M	M			
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23			
			M	M			
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	<24			
			M	M			
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	<118	<118			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221103-55

Report Number: 668391

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

VOC MS (S)

Results Legend		Customer Sample Ref.		DS101	DS101				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		DS101 F-FYN1XB-C99L 2.50 - 3.00 Soil/Solid (S) 01/11/2022 15:49 03/11/2022 221103-55 27112643 ES110	DS101 F-MYN1XB-PZ11 4.50 - 5.00 Soil/Solid (S) 01/11/2022 15:49 03/11/2022 221103-55 27112662 ES112				
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM116	107	119					
Toluene-d8**	%	TM116	96.9	93.1					
4-Bromofluorobenzene**	%	TM116	90.5	93.3					
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<200 M	<200 M					
Benzene	<9 µg/kg	TM116	<180 M	<180 M					
Toluene	<7 µg/kg	TM116	<140 M	<140 M					
Ethylbenzene	<4 µg/kg	TM116	<80 M	<80 M					
p/m-Xylene	<10 µg/kg	TM116	<200 #	<200 #					
o-Xylene	<10 µg/kg	TM116	<200 M	<200 M					
Sum of BTEX	<40 µg/kg	TM116	<800	<800					



CERTIFICATE OF ANALYSIS

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Location: Keadby 3

Superseded Report:

Asbestos Identification - Solid Samples

Results Legend

- # ISO17025 accredited.
- M mCERTS accredited.
- * Subcontracted test.
- (F) Trigger breach confirmed
- 1-5&*%\$@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS101ES110 2.50 - 3.00 SOLID 01/11/2022 00:00:00 03/11/2022 05:00:00 221103-55 27112643 TM048	14/11/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	DS101ES112 4.50 - 5.00 SOLID 01/11/2022 00:00:00 03/11/2022 05:00:00 221103-55 27112662 TM048	14/11/2022	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM024	Method 4500A & B, AWWA/APHA, 20th Ed., 1999	Determination of Exchangeable Ammonium and Ammoniacal Nitrogen as N by titration on solids
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM136	Method 17.10, Second Site property, March 2003	Determination of Sulphur by HPLC
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM180	Sulphide in waters and waste waters 1991 ISBN 01 175 7186 SCA rec. 2007 (unpublished)	The Determination Of Easily Liberated Sulphide In Soil Samples by Ion Selective Electrode Technique
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid Extractable Sulphate in Soils by ICP OES
TM243		Mixed Anions In Soils By Kone
TM415	Analysis of Petroleum Hydrocarbons in Environmental Media.	Determination of Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Superseded Report:

Test Completion Dates

Lab Sample No(s)	27112643	27112662
Customer Sample Ref.	DS101	DS101
AGS Ref.	ES110	ES112
Depth	2.50 - 3.00	4.50 - 5.00
Type	Soil/Solid (S)	Soil/Solid (S)

Ammonium Soil by Titration	09-Nov-2022	14-Nov-2022
Anions by Kone (soil)	09-Nov-2022	09-Nov-2022
Asbestos ID in Solid Samples	14-Nov-2022	14-Nov-2022
Chromium III	10-Nov-2022	10-Nov-2022
Cyanide Comp/Free/Total/Thiocyanate	09-Nov-2022	09-Nov-2022
Easily Liberated Sulphide	10-Nov-2022	10-Nov-2022
Elemental Sulphur	10-Nov-2022	10-Nov-2022
EPH	14-Nov-2022	14-Nov-2022
EPH by GCxGC-FID	07-Nov-2022	07-Nov-2022
GRO by GC-FID (S)	14-Nov-2022	14-Nov-2022
Hexavalent Chromium (s)	08-Nov-2022	08-Nov-2022
Metals in solid samples by OES	10-Nov-2022	10-Nov-2022
NO3, NO2 and TON by KONE (s)	09-Nov-2022	09-Nov-2022
PAH by GCMS	10-Nov-2022	10-Nov-2022
pH	09-Nov-2022	09-Nov-2022
Phenols by HPLC (S)	07-Nov-2022	07-Nov-2022
Sample description	03-Nov-2022	03-Nov-2022
Total Organic Carbon	09-Nov-2022	09-Nov-2022
Total Sulphate	10-Nov-2022	10-Nov-2022
VOC MS (S)	08-Nov-2022	08-Nov-2022



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Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221119-43
Your Reference:	F212561
Location:	Keadby 3
Report No:	670290
Order Number:	386/121917/CP

We received 5 samples on Saturday November 19, 2022 and 5 of these samples were scheduled for analysis which was completed on Wednesday November 30, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

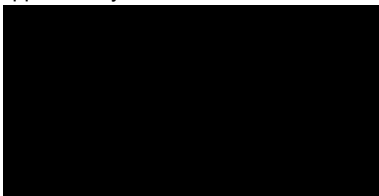
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27188212	HR-BH01	EW1	5.00	18/11/2022
27188226	MS-BH25	EW1	3.00	18/11/2022
27188239	SWD107	EW1	0.00 - 0.00	18/11/2022
27188253	Tripblank-1	EW1	0.00 - 0.00	18/11/2022
27188255	Tripblank-2	EW1	0.00 - 0.00	18/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

 SDG: 221119-43
 Client Ref.: F212561

 Report Number: 670290
 Location: Keadby 3

Superseded Report:

Results Legend <div style="margin-top: 5px;"> X Test N No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
					500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208)	
	27188212	HR-BH01	EW1	5.00		GW
	27188226	MS-BH25	EW1	3.00		GW
	27188239	SWD107	EW1	0.00 - 0.00		SW
Ammonium Low	All	NDPs: 0 Tests: 3			X	
Anions by Kone (w)	All	NDPs: 0 Tests: 3			X	X
Chromium III	All	NDPs: 0 Tests: 3			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3			X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 3			X	X
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3			X	X
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3			X	X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3				X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 3				X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3			X	X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 3			X	
Mercury Dissolved	All	NDPs: 0 Tests: 3			X	X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 3				X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3			X	X
pH Value	All	NDPs: 0 Tests: 3			X	X

10:48:17 30/11/2022

Page 3 of 17

27188255	Tripblank-2	EW1	0.00 - 0.00	Vial (ALE297)	GW																																		
27188253	Tripblank-1	EW1	0.00 - 0.00	Vial (ALE297)	GW																																		
27188239	SWD107	EW1	0.00 - 0.00	Vial (ALE297)	SW											X																							
				NaOH (ALE245)	SW																																		
				HNO3 Unfiltered (ALE204)	SW												X																						
				HNO3 Filtered (ALE204)	SW													X																					
				H2SO4 (ALE244)	SW																																		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Results Legend Test No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27188212	HR-BH01	EW1	5.00		
		27188226	MS-BH25	EW1	3.00		
		27188239	SWD107	EW1	0.00 - 0.00		
						500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	
						GW	SW
						GW	SW
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3	X		X	X	
Total EPH (aq)	All	NDPs: 0 Tests: 3	X		X	X	
Total Metals by ICP-MS	All	NDPs: 0 Tests: 3			X	X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 3		X		X	
TPH CWG (W)	All	NDPs: 0 Tests: 3	X		X	X	
VOC MS (W)	All	NDPs: 0 Tests: 5			X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107		
#	ISO17025 accredited.		F-UHMWXB-INLF	F-IGRWXB-XXKD	F-UHPWXB-4EU8		
M	mCERTS accredited.		5.00	3.00	0.00 - 0.00		
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)		
diss.filt	Dissolved / filtered sample.	Sample Type	18/11/2022	18/11/2022	18/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:45	11:15	10:20		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022	19/11/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-43	221119-43	221119-43		
	(F) Trigger breach confirmed	SDG Ref	27188212	27188226	27188239		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1		
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	15.7	15.7	15.4	#	#
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.73	5.77	0.68	#	#
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.23	7.42	0.874	#	#
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003		
Arsenic (diss.filt)	<0.5 µg/l	TM152	22.4	11.2	1.35	#	#
Boron (diss.filt)	<10 µg/l	TM152	169	37.8	390	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	#	#
Chromium (diss.filt)	<1 µg/l	TM152	<1	1.1	<1	#	#
Copper (diss.filt)	<0.3 µg/l	TM152	0.44	8.58	2.4	#	#
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	1.93	5.74	5.58	#	#
Selenium (diss.filt)	<1 µg/l	TM152	<1	9.44	2.72	#	#
Zinc (diss.filt)	<1 µg/l	TM152	5.86	1.09	1.78	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	202	219	174	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	52.4	0.084	0.857	#	#
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	627	581	528		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	143	<100	#	#
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	143	<100		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	0.0152	<0.01	#	#
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	1.32	0.174	#	#
Sulphate	<2 mg/l	TM184	441	261	325	#	#
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	24.2	#	#
Phenol (low level)	<0.5 µg/l	TM255	<0.5	6.36	<0.5		
Cresols (low level)	<0.5 µg/l	TM255	6.88	0.68	<0.5		
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5		
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	6.88	7.04	<0.5		
pH	<1 pH Units	TM256	7.03	9.79	7.65	#	#
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	#	#
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	#	#
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107			
#	ISO17025 accredited.		F-UHMWXB-INLF	F-IGRWXB-XXKD	F-UHPWXB-4EU8			
M	mCERTS accredited.	5.00	3.00	0.00 - 0.00				
aq	Aqueous / settled sample.	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)				
dis.s.filter	Dissolved / filtered sample.	18/11/2022	18/11/2022	18/11/2022				
tot.unfiltr	Total / unfiltered sample.	09:45	11:15	10:20				
*	Subcontracted - refer to subcontractor report for accreditation status.	19/11/2022	19/11/2022	19/11/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	221119-43	221119-43	221119-43				
(F)	Trigger breach confirmed	27188212	27188226	27188239				
1-4*#@	Sample deviation (see appendix)	EW1	EW1	EW1				
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 #	0.0481 #	<0.01 #			
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	0.0109 #	<0.005 #			
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 #	0.0184 #	<0.005 #			
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 #	0.0062 #	<0.005 #			
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	0.0155 #	<0.005 #			
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 #	<0.002 #	<0.002 #			
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #			
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 #	0.0991 #	<0.082 #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107		
#	ISO17025 accredited.		F-UHMWXB-INLF	F-IGRWXB-XXKD	F-UHPWXB-4EU8		
M	mCERTS accredited.		5.00	3.00	0.00 - 0.00		
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)		
dis.s.filt	Dissolved / filtered sample.	Sample Type	18/11/2022	18/11/2022	18/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:45	11:15	10:20		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022	19/11/2022		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-43	221119-43	221119-43		
	(F) Trigger breach confirmed	SDG Ref	27188212	27188226	27188239		
1-4*§	Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1		
		AGS Reference					
Component	LOD/Units	Method					
1,2-Trichlorobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Chlorophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Methylphenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Nitroaniline (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
2-Nitrophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
3-Nitroaniline (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Chloroaniline (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Methylphenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Nitroaniline (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
4-Nitrophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
Azobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
Acenaphthylene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
Acenaphthene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
Anthracene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<8 #	<20 #	<2 #		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	HR-BH01 F-UHMXB-INLF 5.00 Ground Water (GW) 18/11/2022 09:45 19/11/2022 221119-43 27188212 EW1	MS-BH25 F-IGRWXB-XXKD 3.00 Ground Water (GW) 18/11/2022 11:15 19/11/2022 221119-43 27188226 EW1	SWD107 F-UHPWXB-4EU8 0.00 - 0.00 Surface Water (SW) 18/11/2022 10:20 19/11/2022 221119-43 27188239 EW1			
# ISO17025 accredited.	M mCERTS accredited.							
* Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)
Component	LOD/Units	Method	AGS Reference					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Carbazole (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Chrysene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Dibenzofuran (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Diethyl phthalate (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Dimethyl phthalate (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<20 #	<50 #	<5 #			
Fluoranthene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Fluorene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Pentachlorophenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Phenol (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Hexachloroethane (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Nitrobenzene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Naphthalene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Isophorone (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Phenanthrene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			
Pyrene (aq)	<1 µg/l	TM176	<4 #	<10 #	<1 #			



CERTIFICATE OF ANALYSIS

ValidatedSDG: 221119-43
Client Ref.: F212561Report Number: 670290
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107			
#	ISO17025 accredited.		Depth (m)	F-UHMWXB-INLF	F-I6RWXB-XXKD	F-UHPWXB-4EU8		
M	mCERTS accredited.	Sample Type	5.00	3.00	0.00 - 0.00			
aq	Aqueous / settled sample.	Date Sampled	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)			
dis.s.fltr	Dissolved / filtered sample.	Sample Time	18/11/2022	18/11/2022	18/11/2022			
tot.unfltr	Total / unfiltered sample.	Date Received	09:45	11:15	10:20			
*	Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref	19/11/2022	19/11/2022	19/11/2022			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Lab Sample No.(s)	221119-43	221119-43	221119-43			
(F)	Trigger breach confirmed	AGS Reference	27188212	27188226	27188239			
1-4*#	@ Sample deviation (see appendix)		EW1	EW1	EW1			
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM245	87	90	100			
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	#	#	#
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10			
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10			
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10			
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10			
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10			
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10	<10	<10			
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107	Tripblank-1	Tripblank-2
#	ISO17025 accredited.		F-UHMWXB-INLF	F-IGRWXB-XXKD	F-UHPWXB-4EU8	F-B4TWXB-RO8V	F-3CTWXB-P18V
M	mCERTS accredited.	Depth (m)	5.00	3.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Ground Water (GW)	Ground Water (GW)
dis.sfil	Dissolved / filtered sample.	Date Sampled	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022
tot.unfil	Total / unfiltered sample.	Date Received	09:45	11:15	10:20	11:30	11:30
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-43	221119-43	221119-43	221119-43	221119-43
	(F) Trigger breach confirmed	SDG Ref	27188212	27188226	27188239	27188253	27188255
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	107	88.1	114		
Toluene-d8**	%	TM208	99	100	99.8	99.7	104
4-Bromofluorobenzene**	%	TM208	97.5	94.5	99.6		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1		
Chloromethane	<1 µg/l	TM208	<1	<1	<1		
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1		
Bromomethane	<1 µg/l	TM208	<1	<1	<1		
Chloroethane	<1 µg/l	TM208	<1	<1	<1		
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1		
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1		
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1		
Dichloromethane	<3 µg/l	TM208	<3	<3.5	<3		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1		
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1		
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1		
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1		
Chloroform	<1 µg/l	TM208	<1	<1	<1		
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1		
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1		
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1		
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1		
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208	<1	<1	<1		
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1		
Dibromomethane	<1 µg/l	TM208	<1	<1	<1		
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1		
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1		
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1		
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1		
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25	SWD107	Tripblank-1	Tripblank-2
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-UHMWXB-INLF 5.00 Ground Water (GW) 18/11/2022 09:45 19/11/2022 221119-43 27188212 EW1	F-IGRWXB-XXKD 3.00 Ground Water (GW) 18/11/2022 11:15 19/11/2022 221119-43 27188226 EW1	F-UHPWXB-4EU8 0.00 - 0.00 Surface Water (SW) 18/11/2022 10:20 19/11/2022 221119-43 27188239 EW1	F-B4TWXB-R08V 0.00 - 0.00 Ground Water (GW) 18/11/2022 11:30 19/11/2022 221119-43 27188253 EW1	F-3CTWXB-P18V 0.00 - 0.00 Ground Water (GW) 18/11/2022 11:30 19/11/2022 221119-43 27188255 EW1
Component	LOD/Units	Method					
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Bromofom	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

VOC MS (W)

Table with columns for Results Legend, Customer Sample Ref., and multiple data columns (HR-BH01, MS-BH25, SWD107, Tripblank-1, Tripblank-2). It includes a grid for Component, LOD/Units, and Method, with rows for 'Sum of detected Xylenes' and 'Sum of BTEX'.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-43
Client Ref.: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27188212	27188226	27188239	27188253	27188255
AGS Ref.	HR-BH01	MS-BH25	SWD107	Tripblank-1	Tripblank-2
Depth	EW1	EW1	EW1	EW1	EW1
Type	5.00	3.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Surface Water	Ground Water	Ground Water
Ammonium Low	29-Nov-2022	29-Nov-2022	29-Nov-2022		
Anions by Kone (w)	25-Nov-2022	25-Nov-2022	25-Nov-2022		
Chromium III	29-Nov-2022	29-Nov-2022	29-Nov-2022		
Dissolved Metals by ICP-MS	23-Nov-2022	23-Nov-2022	23-Nov-2022		
EPH (DRO) (C10-C40) Aqueous (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022		
EPH CWG (Aliphatic) Aqueous GC (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022		
EPH CWG (Aromatic) Aqueous GC (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022		
GRO by GC-FID (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022		
Low Level Cyanide (W)	23-Nov-2022	22-Nov-2022	22-Nov-2022		
Low Level Hexavalent Chromium (w)	29-Nov-2022	29-Nov-2022	29-Nov-2022		
Low Level Phenols by HPLC (W)	30-Nov-2022	30-Nov-2022	30-Nov-2022		
Mercury Dissolved	23-Nov-2022	25-Nov-2022	25-Nov-2022		
Nitrite by Kone (w)	24-Nov-2022	24-Nov-2022	24-Nov-2022		
PAH Spec MS - Aqueous (W)	25-Nov-2022	25-Nov-2022	25-Nov-2022		
pH Value	23-Nov-2022	23-Nov-2022	23-Nov-2022		
SVOC MS (W) - Aqueous	25-Nov-2022	25-Nov-2022	25-Nov-2022		
Total EPH (aq)	28-Nov-2022	28-Nov-2022	28-Nov-2022		
Total Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022		
Total Organic and Inorganic Carbon	22-Nov-2022	22-Nov-2022	22-Nov-2022		
TPH CWG (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022		
VOC MS (W)	24-Nov-2022	24-Nov-2022	24-Nov-2022	23-Nov-2022	23-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221119-43
Client Ref: F212561

Report Number: 670290
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	02 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221119-41
Your Reference:	F212561
Location:	Keadby 3
Report No:	670797
Order Number:	386/121917/CP

We received 8 samples on Saturday November 19, 2022 and 8 of these samples were scheduled for analysis which was completed on Friday December 02, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

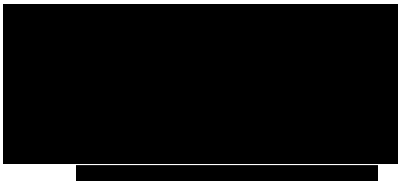
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27188111	MS-BH03	EW1	4.50	17/11/2022
27188123	MS-BH07	EW1	11.00	17/11/2022
27188135	MS-BH10	EW1	10.00	17/11/2022
27188147	MS-BH12	EW1	8.00	17/11/2022
27188160	MS-BH13	EW1	9.00	17/11/2022
27188173	MS-BH17	EW1	6.00	17/11/2022
27188187	MS-BH20	EW1	8.00	17/11/2022
27188199	MS-BH23	EW1	3.00	17/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container										Sample Type																		
	X Test	N No Determination Possible	27188111	MS-BH03	MS-BH07	EW1	4.50	11.00	27188135	MS-BH10	EW1	10.00	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	Sample Type			
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4																																		GW	
Ammonium Low	All	NDPs: 0 Tests: 8																																			GW
Anions by Kone (w)	All	NDPs: 0 Tests: 8																																			GW
Chromium III	All	NDPs: 0 Tests: 8																																			GW
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8																																			GW
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8																																			GW
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7																																			GW
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7																																			GW
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8																																			GW
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8																																			GW
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8																																			GW
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8																																			GW
Mercury Dissolved	All	NDPs: 0 Tests: 8																																			GW
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8																																			GW
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8																																			GW



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container										Sample Type						
	X Test	No Determination Possible																							
			27188111	MS-BH03	EW1	4.50			HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	GW		
			27188123	MS-BH07	EW1	11.00			HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	GW		
			27188135	MS-BH10	EW1	10.00			HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	GW		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 3																						X	
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4																							X
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4																							X
pH Value	All	NDPs: 0 Tests: 8																							X
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4																							X
Total EPH (aq)	All	NDPs: 0 Tests: 8																							X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8																							X
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8																							X
TPH CWG (W)	All	NDPs: 0 Tests: 7																							X
VOC MS (W)	All	NDPs: 0 Tests: 8																							X

27188173	MS-BH17	EW1	6:00	500ml Plastic (ALE208)	GW																	
				250ml Amber Gl. PTFE/PE (ALE219)	GW																	
				0.5l glass bottle (ALE227)	GW																	
				Vial (ALE297)	GW																	
				NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	
				HNO3 Filtered (ALE204)	GW																	
				H2SO4 (ALE244)	GW																	
				500ml Plastic (ALE208)	GW																	
				250ml Amber Gl. PTFE/PE (ALE219)	GW																	
27188160	MS-BH13	EW1	9:00	0.5l glass bottle (ALE227)	GW																	
				Vial (ALE297)	GW																	
				NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	
				HNO3 Filtered (ALE204)	GW																	
				H2SO4 (ALE244)	GW																	
				500ml Plastic (ALE208)	GW																	
				250ml Amber Gl. PTFE/PE (ALE219)	GW																	
				0.5l glass bottle (ALE227)	GW																	
				Vial (ALE297)	GW																	
27188147	MS-BH12	EW1	8:00	NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	
				HNO3 Filtered (ALE204)	GW																	
				H2SO4 (ALE244)	GW																	
				500ml Plastic (ALE208)	GW																	
				250ml Amber Gl. PTFE/PE (ALE219)	GW																	
				0.5l glass bottle (ALE227)	GW																	
				Vial (ALE297)	GW																	
				NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	
27188135	MS-BH10	EW1	10:00	NaOH (ALE245)	GW																	
				Vial (ALE297)	GW																	
				0.5l glass bottle (ALE227)	GW																	
				PTFE/PE (ALE219)	GW																	
				250ml Amber Gl. PTFE/PE (ALE219)	GW																	
				500ml Plastic (ALE208)	GW																	
				H2SO4 (ALE244)	GW																	
				Vial (ALE297)	GW																	
				NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	



CERTIFICATE OF ANALYSIS

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type							
		27188173	MS-BH17	EW1	6.00	Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	GW	
		27188187	MS-BH20	EW1	8.00	Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	GW	
		27188199	MS-BH23	EW1	3.00	Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	GW	
						Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	GW	
						Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	GW	
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4																						
Ammonium Low	All	NDPs: 0 Tests: 8																						
Anions by Kone (w)	All	NDPs: 0 Tests: 8																						
Chromium III	All	NDPs: 0 Tests: 8																						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8																						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8																						
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7																						
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 7																						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8																						
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8																						
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8																						
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8																						
Mercury Dissolved	All	NDPs: 0 Tests: 8																						
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8																						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8																						



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH03 F-T3XUXB-9Z9N 4.50 Ground Water (GW) 17/11/2022 10:45 19/11/2022 221119-41 27188111 EW1	MS-BH07 F-K3AVXB-ZLFL 11.00 Ground Water (GW) 17/11/2022 15:35 19/11/2022 221119-41 27188123 EW1	MS-BH10 F-S7YUXB-U1EV 10.00 Ground Water (GW) 17/11/2022 11:40 19/11/2022 221119-41 27188135 EW1	MS-BH12 F-K77VXB-UQ1G 8.00 Ground Water (GW) 17/11/2022 13:35 19/11/2022 221119-41 27188147 EW1	MS-BH13 F-EU5VXB-QY8B 9.00 Ground Water (GW) 17/11/2022 12:40 19/11/2022 221119-41 27188160 EW1	MS-BH17 F-5T8VXB-FJZZ 6.00 Ground Water (GW) 17/11/2022 14:30 19/11/2022 221119-41 27188173 EW1								
# ISO17025 accredited.	M mCERTS accredited.								aq Aqueous / settled sample.	diss.filt Dissolved / filtered sample.	tot.unfilt Total / unfiltered sample.	* Subcontracted - refer to subcontractor report for accreditation status.	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	(F) Trigger breach confirmed	1-4* @ Sample deviation (see appendix)	Depth (m)
Component	LOD/Units	Method														
Organic Carbon, Total	<3 mg/l	TM090	16	14.7	12.4	12.3	14.4	21								
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.91	1.98	1.76	1.49	1.54	1.88								
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.45	2.55	2.26	1.92	1.98	2.42								
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003								
Arsenic (diss.filt)	<0.5 µg/l	TM152	90.7	17.9	24.1	42.6	54.3	146								
Boron (diss.filt)	<10 µg/l	TM152	38.4	521	98	83.8	93.8	39.4								
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	0.313	0.119	<0.08	<0.08	<0.08								
Chromium (diss.filt)	<1 µg/l	TM152	<1	1.77	1.88	<1	<1	<1								
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	0.649	<0.3	0.358	<0.3	<0.3								
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2								
Nickel (diss.filt)	<0.4 µg/l	TM152	2.61	2.85	2.23	2.68	1.48	1.63								
Selenium (diss.filt)	<1 µg/l	TM152	<1	26	1.09	<1	<1	<1								
Zinc (diss.filt)	<1 µg/l	TM152	4.37	2.53	2.03	2.42	1.88	3.09								
Calcium (Dis.Filt)	<0.2 mg/l	TM152	175	215	232	243	464	68.5								
Iron (Dis.Filt)	<0.019 mg/l	TM152	17.2	7.99	3.64	15	10	29.8								
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	690	639	681	849	1210	243								
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100	<100	<100	218	<100								
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100	<100	<100	218	<100								
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	0.0103	<0.01	<0.01								
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	0.224	<0.05	<0.05	<0.05	<0.05								
Sulphate	<2 mg/l	TM184	420	1000	766	540	1110	56.3								
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	7.1	<0.3	<0.3	<0.3	<0.3								
PCB congener 28	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 52	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 101	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 118	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 138	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 153	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 180	<0.015 µg/l	TM197	<0.015				<0.015									
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105				<0.105									
PCB congener 77	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 81	<0.015 µg/l	TM197	<0.015				<0.015									
PCB congener 105	<0.015 µg/l	TM197	<0.015				<0.015									



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend			Customer Sample Ref.					
# ISO17025 accredited.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17		
M mCERTS accredited.	F-T3XUXB-9Z9N	F-K3AVXB-ZLFL	F-S7YUXB-U1EV	F-K77VXB-UQ1G	F-EU6VXB-QY8B	F-5T8VXB-FJZZ		
aq Aqueous / settled sample.	4.50	11.00	10.00	8.00	9.00	6.00		
dis.filt Dissolved / filtered sample.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
tot.unfilt Total / unfiltered sample.	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022		
* Subcontracted - refer to subcontractor report for accreditation status.	10:45	15:35	11:40	13:35	12:40	14:30		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022		
(F) Trigger breach confirmed	221119-41	221119-41	221119-41	221119-41	221119-41	221119-41		
1-4* Sample deviation (see appendix)	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref		
	27188111	27188123	27188135	27188147	27188160	27188173		
	Lab Sample No.(s)	Lab Sample No.(s)	Lab Sample No.(s)	Lab Sample No.(s)	Lab Sample No.(s)	Lab Sample No.(s)		
	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference		
	EW1	EW1	EW1	EW1	EW1	EW1		
Component	LOD/Units	Method						
PCB congener 114	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 123	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 126	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 156	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 157	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 167	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 169	<0.015 µg/l	TM197	<0.015			<0.015		
PCB congener 189	<0.015 µg/l	TM197	<0.015			<0.015		
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	
pH	<1 pH Units	TM256	7.24	7.35	7.56	7.28	7.43	
			#	#	#	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	
			#	#	#	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	
			#	#	#	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	<0.003	<0.003	
			#	#	#	#	#	
Trifluralin	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
alpha-HCH	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.04		<0.1	<0.1	
Heptachlor	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Aldrin	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
beta-HCH	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Isodrin	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
delta-HCH	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Heptachlor epoxide	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
o,p'-DDE	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Endosulphan I	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
trans-Chlordane	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
cis-Chlordane	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
p,p'-DDE	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Dieldrin	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	
Endrin	<0.01 µg/l	TM343		<0.02		<0.05	<0.05	



CERTIFICATE OF ANALYSIS

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Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*§@ Sample deviation (see appendix)		F-T3XUXB-9Z9N 4.50 Ground Water (GW) 17/11/2022 10:45 19/11/2022 221119-41 27188111 EW1	F-K3AVXB-ZLFL 11.00 Ground Water (GW) 17/11/2022 15:35 19/11/2022 221119-41 27188123 EW1	F-S7YUXB-U1EV 10.00 Ground Water (GW) 17/11/2022 11:40 19/11/2022 221119-41 27188135 EW1	F-K77VXB-UQ1G 8.00 Ground Water (GW) 17/11/2022 13:35 19/11/2022 221119-41 27188147 EW1	F-EU5VXB-QY8B 9.00 Ground Water (GW) 17/11/2022 12:40 19/11/2022 221119-41 27188160 EW1	F-5T8VXB-FJZZ 6.00 Ground Water (GW) 17/11/2022 14:30 19/11/2022 221119-41 27188173 EW1	
Component	LOD/Units	Method						
o,p'-DDT	<0.01 µg/l	TM343		<0.02		<0.05		<0.05
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.02		<0.05		<0.05
Endosulphan II	<0.02 µg/l	TM343		<0.04		<0.1		<0.1
p,p'-DDT	<0.01 µg/l	TM343		<0.04		<0.1		<0.1
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.04		<0.1		<0.1
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.04		<0.1		<0.1
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.08		<0.2		<0.2
Permethrin I	<0.01 µg/l	TM343		<0.02		<0.05		<0.05
Permethrin II	<0.01 µg/l	TM343		<0.02		<0.05		<0.05
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Dichlorvos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Dichlobenil	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Mevinphos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Tecnazene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Hexachlorobenzene	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Demeton-S-methyl	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Phorate	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Diazinon	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Triallate	<0.01 µg/l	TM344		<0.02		0.0596		0.0264
Atrazine	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Simazine	<0.01 µg/l	TM344		<0.02		0.166		<0.02
Disulfoton	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Propetamphos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Chlorpyrifos-methyl	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Dimethoate	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Chlorpyrifos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Methyl Parathion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Malathion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Fenthion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
# ISO17025 accredited. M MCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)			F-T3XUXB-9Z9N 4.50 Ground Water (GW) 17/11/2022 10:45 19/11/2022 221119-41 27188111 EW1	F-K3AVXB-ZLFL 11.00 Ground Water (GW) 17/11/2022 15:35 19/11/2022 221119-41 27188123 EW1	F-S7YUXB-U1EV 10.00 Ground Water (GW) 17/11/2022 11:40 19/11/2022 221119-41 27188135 EW1	F-K77VXB-UQ1G 8.00 Ground Water (GW) 17/11/2022 13:35 19/11/2022 221119-41 27188147 EW1	F-EU5VXB-QY8B 9.00 Ground Water (GW) 17/11/2022 12:40 19/11/2022 221119-41 27188160 EW1	F-5T8VXB-FJZZ 6.00 Ground Water (GW) 17/11/2022 14:30 19/11/2022 221119-41 27188173 EW1
Component	LOD/Units	Method						
Fenitrothion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Triadimefon	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Pendimethalin	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Parathion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Chlorfenvinphos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
trans-Chlordane	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
cis-Chlordane	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Ethion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Carbophenothion	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Triazophos	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Phosalone	<0.01 µg/l	TM344		<0.02		<0.05		<0.02
Azinphos methyl	<0.02 µg/l	TM344		<0.04		<0.1		<0.04
Azinphos ethyl	<0.02 µg/l	TM344		<0.04		<0.1		<0.04
Dinitro-o-cresol	<0.1 µg/l	TM411		<1		<0.5		<0.5
Clopyralid	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
MCPA	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
Mecoprop	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
Dicamba	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
MCPB	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
2,4-DB	<0.1 µg/l	TM411		<1		<0.5		<0.5
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
Dichlorprop	<0.1 µg/l	TM411		<1		<0.5		<0.5
Triclopyr	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
Fenoprop (Silvex)	<0.1 µg/l	TM411		<1		<0.5		<0.5
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
Bromoxynil	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
Benzolin	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
Ioxynil	<0.05 µg/l	TM411		<0.5		<0.25		<0.25
Pentachlorophenol	<0.04 µg/l	TM411		<0.4		<0.2		<0.2
Fluoroxypyr	<0.1 µg/l	TM411		<1		<0.5		<0.5



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
#	ISO17025 accredited.		F-PDVUXB-V838	F-2XBVXB-GUJCE			
M	mCERTS accredited.		8.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	17/11/2022	17/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:50	16:30			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-41	221119-41			
	(F) Trigger breach confirmed	SDG Ref	27188187	27188199			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	12.7	10.8	#	#	
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	3.06	<0.01	#	#	
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	3.94	<0.01	#	#	
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	35.8	9.11	#	#	
Boron (diss.filt)	<10 µg/l	TM152	206	123	#	#	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	#	#	
Chromium (diss.filt)	<1 µg/l	TM152	2.56	2.36	#	#	
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	#	#	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	0.524	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	5.68	4.33	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	1.36	<1	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	3.3	3.3	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	399	339	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	2.63	5.17	#	#	
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1220	922			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100	#	#	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	#	#	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	#	#	
Sulphate	<2 mg/l	TM184	1310	748	#	#	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	#	#	
PCB congener 28	<0.015 µg/l	TM197		<0.015			
PCB congener 52	<0.015 µg/l	TM197		<0.015			
PCB congener 101	<0.015 µg/l	TM197		<0.015			
PCB congener 118	<0.015 µg/l	TM197		<0.015			
PCB congener 138	<0.015 µg/l	TM197		<0.015			
PCB congener 153	<0.015 µg/l	TM197		<0.015			
PCB congener 180	<0.015 µg/l	TM197		<0.015			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105			
PCB congener 77	<0.015 µg/l	TM197		<0.015			
PCB congener 81	<0.015 µg/l	TM197		<0.015			
PCB congener 105	<0.015 µg/l	TM197		<0.015			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838 8.00 Ground Water (GW) 17/11/2022 09:50 19/11/2022 221119-41 27188187 EW1	F-2XBVXB-GUCE 3.00 Ground Water (GW) 17/11/2022 16:30 19/11/2022 221119-41 27188199 EW1			
Component	LOD/Units	Method					
PCB congener 114	<0.015 µg/l	TM197		<0.015			
PCB congener 123	<0.015 µg/l	TM197		<0.015			
PCB congener 126	<0.015 µg/l	TM197		<0.015			
PCB congener 156	<0.015 µg/l	TM197		<0.015			
PCB congener 157	<0.015 µg/l	TM197		<0.015			
PCB congener 167	<0.015 µg/l	TM197		<0.015			
PCB congener 169	<0.015 µg/l	TM197		<0.015			
PCB congener 189	<0.015 µg/l	TM197		<0.015			
Phenol (low level)	<0.5 µg/l	TM255	1.75	<0.5			
Cresols (low level)	<0.5 µg/l	TM255	2.58	<0.5			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	4.33	<0.5			
pH	<1 pH Units	TM256	7.7	7.49	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	#	#	
Trifluralin	<0.01 µg/l	TM343		<0.01			
alpha-HCH	<0.01 µg/l	TM343		<0.01			
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.02			
Heptachlor	<0.01 µg/l	TM343		<0.01			
Aldrin	<0.01 µg/l	TM343		<0.01			
beta-HCH	<0.01 µg/l	TM343		<0.01			
Isodrin	<0.01 µg/l	TM343		<0.01			
delta-HCH	<0.01 µg/l	TM343		<0.01			
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01			
o,p'-DDE	<0.01 µg/l	TM343		<0.01			
Endosulphan I	<0.01 µg/l	TM343		<0.01			
trans-Chlordane	<0.01 µg/l	TM343		<0.01			
cis-Chlordane	<0.01 µg/l	TM343		<0.01			
p,p'-DDE	<0.01 µg/l	TM343		<0.01			
Dieldrin	<0.01 µg/l	TM343		<0.01			
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01			
Endrin	<0.01 µg/l	TM343		<0.01			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis. fil. Dissolved / filtered sample. tot.unfil. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838 8.00 Ground Water (GW) 17/11/2022 09:50 19/11/2022 221119-41 27188187 EW1	F-2XBVXB-GUCE 3.00 Ground Water (GW) 17/11/2022 16:30 19/11/2022 221119-41 27188199 EW1			
Component	LOD/Units	Method					
o,p'-DDT	<0.01 µg/l	TM343		<0.01			
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01			
Endosulphan II	<0.02 µg/l	TM343		<0.02			
p,p'-DDT	<0.01 µg/l	TM343		<0.02			
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02			
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02			
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.04			
Permethrin I	<0.01 µg/l	TM343		<0.01			
Permethrin II	<0.01 µg/l	TM343		<0.01			
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01			
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01			
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01			
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01			
Dichlorvos	<0.01 µg/l	TM344		<0.01			
Dichlobenil	<0.01 µg/l	TM344		<0.01			
Mevinphos	<0.01 µg/l	TM344		<0.01			
Tecnazene	<0.01 µg/l	TM344		<0.01			
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01			
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01			
Phorate	<0.01 µg/l	TM344		<0.01			
Diazinon	<0.01 µg/l	TM344		<0.01			
Triallate	<0.01 µg/l	TM344		0.0347			
Atrazine	<0.01 µg/l	TM344		<0.01			
Simazine	<0.01 µg/l	TM344		<0.01			
Disulfoton	<0.01 µg/l	TM344		<0.01			
Propetamphos	<0.01 µg/l	TM344		<0.01			
Chlorpyrifos-methyl	<0.01 µg/l	TM344		<0.01			
Dimethoate	<0.01 µg/l	TM344		<0.01			
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01			
Chlorpyrifos	<0.01 µg/l	TM344		<0.01			
Methyl Parathion	<0.01 µg/l	TM344		<0.01			
Malathion	<0.01 µg/l	TM344		<0.01			
Fenthion	<0.01 µg/l	TM344		<0.01			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis. fil. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838 8.00 Ground Water (GW) 17/11/2022 09:50 19/11/2022 221119-41 27188187 EW1	F-2XBVXB-GUCE 3.00 Ground Water (GW) 17/11/2022 16:30 19/11/2022 221119-41 27188199 EW1			
Component	LOD/Units	Method					
Fenitrothion	<0.01 µg/l	TM344		<0.01			
Triadimefon	<0.01 µg/l	TM344		<0.01			
Pendimethalin	<0.01 µg/l	TM344		<0.01			
Parathion	<0.01 µg/l	TM344		<0.01			
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01			
trans-Chlordane	<0.01 µg/l	TM344		<0.01			
cis-Chlordane	<0.01 µg/l	TM344		<0.01			
Ethion	<0.01 µg/l	TM344		<0.01			
Carbophenothion	<0.01 µg/l	TM344		<0.01			
Triazophos	<0.01 µg/l	TM344		<0.01			
Phosalone	<0.01 µg/l	TM344		<0.01			
Azinphos methyl	<0.02 µg/l	TM344		<0.02			
Azinphos ethyl	<0.02 µg/l	TM344		<0.02			
Dinitro-o-cresol	<0.1 µg/l	TM411		0.129			
Clopyralid	<0.04 µg/l	TM411		<0.04			
MCPA	<0.05 µg/l	TM411		<0.05			
Mecoprop	<0.04 µg/l	TM411		<0.04			
Dicamba	<0.04 µg/l	TM411		<0.04			
MCPB	<0.05 µg/l	TM411		<0.05			
2,4-DB	<0.1 µg/l	TM411		<0.1			
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05			
Dichlorprop	<0.1 µg/l	TM411		<0.1			
Triclopyr	<0.05 µg/l	TM411		<0.05			
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1			
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05			
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05			
Bromoxynil	<0.04 µg/l	TM411		<0.04			
Benazolin	<0.04 µg/l	TM411		<0.04			
loxynil	<0.05 µg/l	TM411		<0.05			
Pentachlorophenol	<0.04 µg/l	TM411		<0.04			
Fluoroxypyr	<0.1 µg/l	TM411		<0.1			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41

Report Number: 670797

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.		MS-BH23							
# ISO17025 accredited.				F-2XBVXB-GUCE							
M mCERES accredited.				3.00							
aq Aqueous / settled sample.		Depth (m)		Ground Water (GW)							
diss.filt Dissolved / filtered sample.		Sample Type		17/11/2022							
tot.unfilt Total / unfiltered sample.		Date Sampled		16:30							
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		19/11/2022							
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221119-41							
(F) Trigger breach confirmed		SDG Ref		27188199							
1-4*\$@ Sample deviation (see appendix)		Lab Sample No.(s)		EW1							
		AGS Reference									
Component	LOD/Units	Method									
GRO >C5-C10	<10 µg/l	TM245	<10								
EPH (C6-C10)	<100 µg/l	TM245	<100								



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend			Customer Sample Ref.		MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
#	ISO17025 accredited.				F-T3XUXB-9Z9N	F-K3AVXB-ZLFL	F-S7YUXB-U1EV	F-K77VXB-UQ1G	F-EU5VXB-QY8B	F-5T8VXB-FJZZ
M	mCERTS accredited.				4.50	11.00	10.00	8.00	9.00	6.00
aq	Aqueous / settled sample.		Depth (m)		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.		Sample Type		17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
tot.unfilt	Total / unfiltered sample.		Date Sampled		10:45	15:35	11:40	13:35	12:40	14:30
	Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221119-41	221119-41	221119-41	221119-41	221119-41	221119-41
(F)	Trigger breach confirmed		SDG Ref		27188111	27188123	27188135	27188147	27188160	27188173
1-4*§@	Sample deviation (see appendix)		Lab Sample No.(s)		EW1	EW1	EW1	EW1	EW1	EW1
	AGS Reference									
Component	LOD/Units	Method								
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	#	<0.01	#	<0.01	#	0.0652	#
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	0.0054	#	0.0102	#
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	0.0074	#
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	0.0065	#	<0.005	#
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	#	<0.002	#	<0.002	#	<0.002	#
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	#	<0.082	#	<0.082	#	<0.082	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838	F-2XBVXB-GUCE				
M	mCERTS accredited.		8.00	3.00				
aq	Aqueous / settled sample.		Ground Water (GW)	Ground Water (GW)				
diss.filt	Dissolved / filtered sample.		17/11/2022	17/11/2022				
tot.unfilt	Total / unfiltered sample.		09:50	16:30				
*	Subcontracted - refer to subcontractor report for accreditation status.		19/11/2022	19/11/2022				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221119-41	221119-41				
(F)	Trigger breach confirmed		27188187	27188199				
1-4*\$@	Sample deviation (see appendix)		EW1	EW1				
Component	LOD/Units		Method					
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	#	#		
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	#	#		
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#		
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	#	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH10	MS-BH13	MS-BH20		
#	ISO17025 accredited.		F-T3XUXB-9Z9N	F-S7YUXB-U1EV	F-EU5VXB-QY8B	F-PDVUXB-V638		
M	mCERTS accredited.		4.50	10.00	9.00	8.00		
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
dis.s.filt	Dissolved / filtered sample.	Sample Type	17/11/2022	17/11/2022	17/11/2022	17/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:45	11:40	12:40	09:50		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022	19/11/2022	19/11/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-41	221119-41	221119-41	221119-41		
	(F) Trigger breach confirmed	SDG Ref	27188111	27188135	27188160	27188187		
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1		
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Methylphenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Methylphenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
Azobenzene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
Acenaphthylene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
Acenaphthene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
Anthracene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<8	<4	<4	<16	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<4	<2	<2	<8	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Table with columns: Results Legend, Customer Sample Ref., MS-BH03, MS-BH10, MS-BH13, MS-BH20, Component, LOD/Units, Method. Rows list various SVOCs like Benzo(b)fluoranthene, Benzo(k)fluoranthene, etc., with their respective concentrations and methods.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
#	ISO17025 accredited.				F-T3XUXB-9Z9N	F-K3AVXB-ZLFL	F-S7YUXB-U1EV	F-K77VXB-UQ1G	F-EU5VXB-QY8B	F-5T8VXB-FJZZ
M	mCERTS accredited.				4.50	11.00	10.00	8.00	9.00	6.00
aq	Aqueous / settled sample.		Depth (m)		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.		Sample Type		17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
tot.unfilt	Total / unfiltered sample.		Date Sampled		10:45	15:35	11:40	13:35	12:40	14:30
	* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221119-41	221119-41	221119-41	221119-41	221119-41	221119-41
	(F) Trigger breach confirmed		SDG Ref		27188111	27188123	27188135	27188147	27188160	27188173
	1-4*% Sample deviation (see appendix)		Lab Sample No.(s)		EW1	EW1	EW1	EW1	EW1	EW1
			AGS Reference							
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245	96	83	95	90	90	93		
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	<50	<50	<50	<50	<50
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	65	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	65	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10	<10	65	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10	<10	<10	<10	<10	<10	<10	<10
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100	<100	<100	<100	<100



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample Ref.	MS-BH20			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838			
M	mCERTS accredited.		8.00			
aq	Aqueous / settled sample.		Ground Water (GW)			
diss.filter	Dissolved / filtered sample.		17/11/2022			
tot.unfilt	Total / unfiltered sample.		09:50			
	* Subcontracted - refer to subcontractor report for accreditation status.		19/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221119-41			
(F)	Trigger breach confirmed		27188187			
1-4*#	@ Sample deviation (see appendix)		EW1			
Component	LOD/Units	Method				
GRO Surrogate % recovery**	%	TM245	91			
GRO >C5-C12	<50 µg/l	TM245	<50	#		
Aliphatics >C5-C6	<10 µg/l	TM245	<10			
Aliphatics >C6-C8	<10 µg/l	TM245	<10			
Aliphatics >C8-C10	<10 µg/l	TM245	<10			
Aliphatics >C10-C12	<10 µg/l	TM245	<10			
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10			
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10			
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10			
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10			
Aromatics >EC5-EC7	<10 µg/l	TM245	<10			
Aromatics >EC7-EC8	<10 µg/l	TM245	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245	<10			
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10			
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10			
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10			
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10			
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10			
GRO >C5-C10	<10 µg/l	TM245	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
#	ISO17025 accredited.		F-T3XUXB-9Z9N	F-K3AVXB-ZLFL	F-S7YUXB-U1EV	F-K77VXB-UQ1G	F-EU5VXB-QY8B	F-5T8VXB-FJZZ
M	mCERTS accredited.	Depth (m)	4.50	11.00	10.00	8.00	9.00	6.00
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Date Sampled	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
tot.unfilt	Total / unfiltered sample.	Date Received	10:45	15:35	11:40	13:35	12:40	14:30
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022	19/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-41	221119-41	221119-41	221119-41	221119-41	221119-41
	(F) Trigger breach confirmed	SDG Ref	27188111	27188123	27188135	27188147	27188160	27188173
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1	EW1
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	108		106		104	
Toluene-d8**	%	TM208	100		99.4		99.7	
4-Bromofluorobenzene**	%	TM208	98.3		98.9		99.7	
Dichlorodifluoromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Chloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Vinyl chloride	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromomethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Chloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Trichlorofluoromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1-Dichloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Carbon disulphide	<1 µg/l	TM208	<1	#	<1	#	<1	#
Dichloromethane	<3 µg/l	TM208	<3	#	<3	#	<3	#
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	#	<1	#	<1	#
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1-Dichloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
2,2-Dichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromochloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Chloroform	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1-Dichloropropene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Carbontetrachloride	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dichloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Benzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Trichloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Dibromomethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromodichloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Toluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,3-Dichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-T3XUXB-9Z9N 4.50 Ground Water (GW) 17/11/2022 10:45 19/11/2022 221119-41 27188111 EW1	F-K3AVXB-ZLFL 11.00 Ground Water (GW) 17/11/2022 15:35 19/11/2022 221119-41 27188123 EW1	F-S7YUXB-U1EV 10.00 Ground Water (GW) 17/11/2022 11:40 19/11/2022 221119-41 27188135 EW1	F-K77VXB-UQ1G 8.00 Ground Water (GW) 17/11/2022 13:35 19/11/2022 221119-41 27188147 EW1	F-EU5VXB-QY8B 9.00 Ground Water (GW) 17/11/2022 12:40 19/11/2022 221119-41 27188160 EW1	F-5T8VXB-FJZZ 6.00 Ground Water (GW) 17/11/2022 14:30 19/11/2022 221119-41 27188173 EW1
Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Dibromochloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dibromoethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Chlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Styrene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromofom	<1 µg/l	TM208	<1	#	<1	#	<1	#
Isopropylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Propylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
2-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
4-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
tert-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
sec-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
n-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Hexachlorobutadiene	<1 µg/l	TM208	<1	#	<1	#	<1	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#	<1	#	<1	#
Naphthalene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Table with columns: Results Legend, Customer Sample Ref., MS-BH03, MS-BH07, MS-BH10, MS-BH12, MS-BH13, MS-BH17. Rows include Sum of detected Xylenes and Sum of BTEX.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
#	ISO17025 accredited.		F-PDVUXB-V838	F-2XBVXB-GUCE			
M	mCERTS accredited.		8.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	17/11/2022	17/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:50	16:30			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	19/11/2022	19/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221119-41	221119-41			
	(F) Trigger breach confirmed	SDG Ref	27188187	27188199			
	1-4* Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1			
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	109				
Toluene-d8**	%	TM208	98.3				
4-Bromofluorobenzene**	%	TM208	98.8				
Dichlorodifluoromethane	<1 µg/l	TM208	<1	#			
Chloromethane	<1 µg/l	TM208	<1	#			
Vinyl chloride	<1 µg/l	TM208	<1	#			
Bromomethane	<1 µg/l	TM208	<1	#			
Chloroethane	<1 µg/l	TM208	<1	#			
Trichlorofluoromethane	<1 µg/l	TM208	<1	#			
1,1-Dichloroethene	<1 µg/l	TM208	<1	#			
Carbon disulphide	<1 µg/l	TM208	<1	#			
Dichloromethane	<3 µg/l	TM208	<3	#			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	#	<1	#	
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
1,1-Dichloroethane	<1 µg/l	TM208	<1	#			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
2,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Bromochloromethane	<1 µg/l	TM208	<1	#			
Chloroform	<1 µg/l	TM208	<1	#			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	#			
1,1-Dichloropropene	<1 µg/l	TM208	<1	#			
Carbontetrachloride	<1 µg/l	TM208	<1	#			
1,2-Dichloroethane	<1 µg/l	TM208	<1	#			
Benzene	<1 µg/l	TM208	<1	#	<1	#	
Trichloroethene	<1 µg/l	TM208	<1	#			
1,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Dibromomethane	<1 µg/l	TM208	<1	#			
Bromodichloromethane	<1 µg/l	TM208	<1	#			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
Toluene	<1 µg/l	TM208	<1	#	<1	#	
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	#			
1,3-Dichloropropane	<1 µg/l	TM208	<1	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH23			
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-PDVUXB-V838 8.00 Ground Water (GW) 17/11/2022 09:50 19/11/2022 221119-41 27188187 EW1	F-2XBVXB-GUCE 3.00 Ground Water (GW) 17/11/2022 16:30 19/11/2022 221119-41 27188199 EW1			
Component	LOD/Units	Method					
Tetrachloroethene	<1 µg/l	TM208	<1	#			
Dibromochloromethane	<1 µg/l	TM208	<1	#			
1,2-Dibromoethane	<1 µg/l	TM208	<1	#			
Chlorobenzene	<1 µg/l	TM208	<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	
Styrene	<1 µg/l	TM208	<1	#			
Bromofom	<1 µg/l	TM208	<1	#			
Isopropylbenzene	<1 µg/l	TM208	<1	#			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#			
Bromobenzene	<1 µg/l	TM208	<1	#			
Propylbenzene	<1 µg/l	TM208	<1	#			
2-Chlorotoluene	<1 µg/l	TM208	<1	#			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#			
4-Chlorotoluene	<1 µg/l	TM208	<1	#			
tert-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#			
sec-Butylbenzene	<1 µg/l	TM208	<1	#			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#			
n-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	#			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#			
Hexachlorobutadiene	<1 µg/l	TM208	<1	#			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#			
Naphthalene	<1 µg/l	TM208	<1	#			
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	#			
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.					
#	ISO17025 accredited.		MS-BH20	MS-BH23				
M	mCERTS accredited.		F-PDVUXB-V838	F-2XBVXB-GUCE				
sq	Aqueous / settled sample.		8.00	3.00				
dis.filt	Dissolved / filtered sample.		Ground Water (GW)	Ground Water (GW)				
tot.unfilt	Total / unfiltered sample.		17/11/2022	17/11/2022				
*	Subcontracted - refer to subcontractor report for accreditation status.		09:50	16:30				
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.		19/11/2022	19/11/2022				
(F)	Trigger breach confirmed		221119-41	221119-41				
1-4-#@	Sample deviation (see appendix)		SDG Ref	27188187	27188199			
			Lab Sample No.(s)	EW1	EW1			
			AGS Reference					
Component	LOD/Units	Method						
Sum of detected Xylenes	<2 µg/l	TM208	<2					
Sum of BTEX	<5 µg/l	TM208	<5	<5				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221119-41
Client Ref.: F212561

Report Number: 670797
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Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27188111	27188123	27188135	27188147	27188160	27188173	27188187	27188199
AGS Ref.	MS-BH03	MS-BH07	MS-BH10	MS-BH12	MS-BH13	MS-BH17	MS-BH20	MS-BH23
Depth	EW1	EW1	EW1	EW1	EW1	EW1	EW1	EW1
Type	4.50	11.00	10.00	8.00	9.00	6.00	8.00	3.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Acid Herbicides by GCMS		02-Dec-2022		02-Dec-2022		02-Dec-2022		02-Dec-2022
Ammonium Low	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022
Anions by Kone (w)	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022
Chromium III	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022
Dissolved Metals by ICP-MS	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
EPH (DRO) (C10-C40) Aqueous (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022
EPH CWG (Aliphatic) Aqueous GC (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	
EPH CWG (Aromatic) Aqueous GC (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	
GRO by GC-FID (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Cyanide (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Hexavalent Chromium (w)	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022
Low Level Phenols by HPLC (W)	30-Nov-2022	29-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022	30-Nov-2022
Mercury Dissolved	28-Nov-2022	25-Nov-2022	28-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Nitrite by Kone (w)	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022
PAH Spec MS - Aqueous (W)	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022
PCB Congeners - Aqueous (W)	29-Nov-2022				29-Nov-2022			29-Nov-2022
Pesticides (Suite I) by GCMS		25-Nov-2022		25-Nov-2022		25-Nov-2022		25-Nov-2022
Pesticides (Suite II) by GCMS		02-Dec-2022		02-Dec-2022		02-Dec-2022		02-Dec-2022
pH Value	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
SVOC MS (W) - Aqueous	25-Nov-2022		28-Nov-2022		28-Nov-2022		25-Nov-2022	
Total EPH (aq)	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022
Total Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022
Total Organic and Inorganic Carbon	23-Nov-2022	22-Nov-2022	23-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	23-Nov-2022
TPH CWG (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	
VOC MS (W)	24-Nov-2022	23-Nov-2022	24-Nov-2022	23-Nov-2022	24-Nov-2022	23-Nov-2022	24-Nov-2022	23-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221119-41
Client Ref: F212561

Report Number: 670797
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	02 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221118-151
Your Reference:	F212561
Location:	Keadby 3
Report No:	670796
Order Number:	386/121917/CP

We received 10 samples on Friday November 18, 2022 and 10 of these samples were scheduled for analysis which was completed on Friday December 02, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

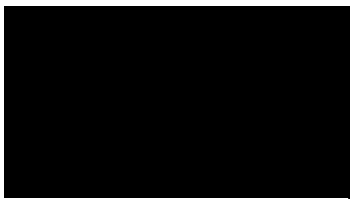
Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27185514	AR-BH01	EW1	5.00	16/11/2022
27185549	AR-BH02	EW1	10.00	16/11/2022
27185565	MS-BH01	EW1	7.00	16/11/2022
27185588	MS-BH05	EW1	6.00	16/11/2022
27185611	MS-BH09	EW1	9.00	16/11/2022
27185631	MS-BH21	EW1	16.00	16/11/2022
27185649	SWD102	EW1	0.00 - 0.00	16/11/2022
27185666	SWD104	EW1	0.00 - 0.00	16/11/2022
27185682	SWD105	EW1	0.00 - 0.00	16/11/2022
27185533	SWD106	EW1	0.00 - 0.00	16/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend

- Test
- No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container													Sample Type							
				H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE287)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE287)	NaOH (ALE245)		HNO3 Unfiltered (ALE204)						
27185514	AR-BH01	EW1	5.00																					
27185549	AR-BH02	EW1	10.00																					
27185565	MS-BH01	EW1	7.00																					

Analyte	All	NDPs: 0 Tests: 3	Container													Sample Type								
			H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE287)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE287)	NaOH (ALE245)		HNO3 Unfiltered (ALE204)							
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 3										X										X		
Ammonium Low	All	NDPs: 0 Tests: 10				X												X						X
Anions by Kone (w)	All	NDPs: 0 Tests: 10			X									X									X	
Chromium III	All	NDPs: 0 Tests: 10									X								X					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10									X									X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 10	X										X									X		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X											X								X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8	X											X								X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10												X								X		
Low Level Cyanide (W)	All	NDPs: 0 Tests: 10											X									X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10		X													X						X	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 10				X													X				X	
Mercury Dissolved	All	NDPs: 0 Tests: 10							X										X					
Nitrite by Kone (w)	All	NDPs: 0 Tests: 10												X						X				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 10	X													X						X		

27185631	MS-BH21	EW1	16.00	H2SO4 (ALE244)	GW																		
				500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)						
27185611	MS-BH09	EW1	9.00	X																			
27185588	MS-BH05	EW1	6.00	X																			
27185566	MS-BH01	EW1	7.00	X																			

27185631	MS-BH21	EW1	16:00	H2SO4 (ALE244)	GW																			
				500ml Plastic (ALE208)	GW																			
27185611	MS-BH09	EW1	9:00	Vial (ALE297)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				NaOH (ALE245)	GW																			
				HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			
				H2SO4 (ALE244)	GW																			
				500ml Plastic (ALE208)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW																			
27185588	MS-BH05	EW1	6:00	HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			
				H2SO4 (ALE244)	GW																			
				500ml Plastic (ALE208)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW																			
				HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			
				H2SO4 (ALE244)	GW																			
27185565	MS-BH01	EW1	7:00	Vial (ALE297)	GW																			
				NaOH (ALE245)	GW																			
				HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			
				500ml Plastic (ALE208)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW																			
				HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container										Sample Type						
	27185631	MS-BH21	EW1	16.00	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	250ml Amber GI. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	27185649	SWD102	EW1	0.00 - 0.00	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	250ml Amber GI. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	27185666	SWD104	EW1	0.00 - 0.00	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	250ml Amber GI. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
						SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
						GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
						GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Ammonium Low	All	NDPs: 0 Tests: 10						X								X					
Anions by Kone (w)	All	NDPs: 0 Tests: 10					X									X					
Chromium III	All	NDPs: 0 Tests: 10			X				X								X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10			X				X								X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 10				X									X						
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8				X									X						
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 8				X									X						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10					X								X					X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 10				X														X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10					X									X					
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 10						X								X					
Mercury Dissolved	All	NDPs: 0 Tests: 10			X				X								X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 10				X														X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 10					X								X						
pH Value	All	NDPs: 0 Tests: 10						X								X					

27185633		SMD106		EW1		0.00 - 0.00	
27185682		SMD105		EW1		0.00 - 0.00	
Vial (ALE297)	SW	Vial (ALE297)	SW	Vial (ALE297)	SW	Vial (ALE297)	SW
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW						
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW				X		
0.5l glass bottle (ALE227)	SW					X	
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X
NaOH (ALE245)	SW						
HNO3 Unfiltered (ALE204)	SW						
HNO3 Filtered (ALE204)	SW			X			
H2SO4 (ALE244)	SW	X					
500ml Plastic (ALE208)	SW		X				
250ml Amber Gl. PTFE/PE (ALE219)	SW						
0.5l glass bottle (ALE227)	SW						
Vial (ALE297)	SW						X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container														Sample Type								
		27185631	MS-BH21	EW1	16.00	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
		27185649	SWD102	EW1	0.00 - 0.00	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
		27185666	SWD104	EW1	0.00 - 0.00	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
						HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
						HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
						HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	SW	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 5								X																	
Total EPH (aq)	All	NDPs: 0 Tests: 10								X								X									
Total Metals by ICP-MS	All	NDPs: 0 Tests: 10													X									X			
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 10										X													X		
TPH CWG (W)	All	NDPs: 0 Tests: 8								X								X									
VOC MS (W)	All	NDPs: 0 Tests: 10						X																X			X

27185682	SWD105	EW1	0.00 - 0.00	Vial (ALE297)	SW														X			
				NaOH (ALE245)	SW																	
				HNO3 Unfiltered (ALE204)	SW								X									
				HNO3 Filtered (ALE204)	SW																	
				H2SO4 (ALE244)	SW							X										
				500ml Plastic (ALE208)	SW																	
				250ml Amber GI. PTFE/PE (ALE219)	SW																	
				0.5l glass bottle (ALE227)	SW								X									
				Vial (ALE297)	SW																	X
				NaOH (ALE245)	SW																	
				HNO3 Unfiltered (ALE204)	SW								X									
				HNO3 Filtered (ALE204)	SW																	
				H2SO4 (ALE244)	SW									X								
500ml Plastic (ALE208)	SW																					
250ml Amber GI. PTFE/PE (ALE219)	SW																					
0.5l glass bottle (ALE227)	SW																	X				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
#	ISO17025 accredited.		F-DU6TXB-54AR	F-M78TXB-S0ZL	F-ARFTXB-ONVS	F-IVCTXB-UY4J	F-8ABTXB-Q5R8	F-4JETXB-U8XK
M	mCERTS accredited.		5.00	10.00	7.00	6.00	9.00	16.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Sample Type	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:15	11:15	16:45	15:00	13:45	15:50
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-151	221118-151	221118-151	221118-151	221118-151	221118-151
	(F) Trigger breach confirmed	SDG Ref	27185514	27185549	27185565	27185588	27185611	27185631
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1	EW1
		AGS Reference						
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	22	17.1	10.1	14.9	14.2	9.84
			#	#	#	#	#	#
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.66	1.29	3.34	3.47	3.65	1.43
			#	#	#	#	#	#
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.13	1.66	4.3	4.46	4.69	1.83
			#	#	#	#	#	#
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Arsenic (diss.filt)	<0.5 µg/l	TM152	16.5	6.4	189	277	67.8	13.4
			#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152	151	187	66.1	50.7	80.6	181
			#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
			#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152	1.43	<1	<1	<1	<1	1.3
			#	#	#	#	#	#
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	0.615	0.592	<0.3	0.373	<0.3
			#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
			#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	2.35	3.34	0.844	0.966	7.02	0.883
			#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152	<1	1.05	<1	<1	<1	<1
			#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152	3.93	2.89	2.2	3.56	5.02	1.58
			#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	517	398	233	184	244	475
			#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	27.3	10.3	16.5	58	47	10.8
			#	#	#	#	#	#
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1490	1230	1550	767	770	1470
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	113	136	340	110	<100	<100
			#	#	#	#	#	#
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	113	136	340	110	<100	<100
			#	#	#	#	#	#
Mercury (diss.filt)	<0.01 µg/l	TM183	0.0105	0.012	<0.01	<0.01	<0.01	<0.01
			#	#	#	#	#	#
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
			#	#	#	#	#	#
Sulphate	<2 mg/l	TM184	898	1110	358	379	532	964
			#	#	#	#	#	#
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
			#	#	#	#	#	#
Phenol (low level)	<0.5 µg/l	TM255	<0.5	1.09	<0.5	<0.5	<0.5	0.79
			#	#	#	#	#	#
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	0.93
			#	#	#	#	#	#
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	1.09	<0.5	<0.5	<0.5	1.72
			#	#	#	#	#	#
pH	<1 pH Units	TM256	7.17	7.39	7.5	7.54	7.5	8.12
			#	#	#	#	#	#
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5
			#	#	#	#	#	#
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
			#	#	#	#	#	#
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	0.00305	0.0037	<0.003
			#	#	#	#	#	#
Trifluralin	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
				#	#		#	#
alpha-HCH	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
				#	#		#	#
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.1	<0.2		<0.2	
				#	#		#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* Sample deviation (see appendix)		AR-BH01 F-DU6TXB-54AR 5.00 Ground Water (GW) 16/11/2022 12:15 18/11/2022 221118-151 27185514 EW1	AR-BH02 F-M78TXB-S0ZL 10.00 Ground Water (GW) 16/11/2022 11:15 18/11/2022 221118-151 27185549 EW1	MS-BH01 F-ARFTXB-ONVS 7.00 Ground Water (GW) 16/11/2022 16:45 18/11/2022 221118-151 27185565 EW1	MS-BH05 F-IVCTXB-UY4J 6.00 Ground Water (GW) 16/11/2022 15:00 18/11/2022 221118-151 27185588 EW1	MS-BH09 F-8ABTXB-Q5R8 9.00 Ground Water (GW) 16/11/2022 13:45 18/11/2022 221118-151 27185611 EW1	MS-BH21 F-4JETXB-U8XK 16.00 Ground Water (GW) 16/11/2022 15:50 18/11/2022 221118-151 27185631 EW1	
Component	LOD/Units	Method						
Heptachlor	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Aldrin	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
beta-HCH	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Isodrin	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
delta-HCH	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Heptachlor epoxide	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
o,p'-DDE	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Endosulphan I	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
trans-Chlordane	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
cis-Chlordane	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
p,p'-DDE	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Dieldrin	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Endrin	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
o,p'-DDT	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Endosulphan II	<0.02 µg/l	TM343		<0.1	<0.2		<0.2	
p,p'-DDT	<0.01 µg/l	TM343		<0.1	<0.1		<0.1	
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.1	<0.1		<0.1	
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.1	<0.1		<0.1	
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.2	<0.4		<0.4	
Permethrin I	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
Permethrin II	<0.01 µg/l	TM343		<0.05	<0.1		<0.1	
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Dichlorvos	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Dichlobenil	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Mevinphos	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Tecnazene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Hexachlorobenzene	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Demeton-S-methyl	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
# ISO17025 accredited. M MCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*% Sample deviation (see appendix)		AR-BH01 F-DU6TXB-54AR 5.00 Ground Water (GW) 16/11/2022 12:15 18/11/2022 221118-151 27185514 EW1	AR-BH02 F-M78TXB-S0ZL 10.00 Ground Water (GW) 16/11/2022 11:15 18/11/2022 221118-151 27185549 EW1	MS-BH01 F-ARFTXB-ONVS 7.00 Ground Water (GW) 16/11/2022 16:45 18/11/2022 221118-151 27185565 EW1	MS-BH05 F-IVCTXB-UY4J 6.00 Ground Water (GW) 16/11/2022 15:00 18/11/2022 221118-151 27185588 EW1	MS-BH09 F-8ABTXB-Q5R8 9.00 Ground Water (GW) 16/11/2022 13:45 18/11/2022 221118-151 27185611 EW1	MS-BH21 F-4JETXB-U8XK 16.00 Ground Water (GW) 16/11/2022 15:50 18/11/2022 221118-151 27185631 EW1	
Component	LOD/Units	Method	AGS Reference					
Phorate	<0.01 µg/l	TM344			<0.1		<0.05	
Diazinon	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Triallate	<0.01 µg/l	TM344		0.109	<0.1		<0.05	
Atrazine	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Simazine	<0.01 µg/l	TM344		<0.05	<0.1		0.113	
Disulfoton	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Propetamphos	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Chlorpyrifos-methyl	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Dimethoate	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Chlorpyrifos	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Methyl Parathion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Malathion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Fenthion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Fenitrothion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Triadimefon	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Pendimethalin	<0.01 µg/l	TM344		<0.05	<0.13		<0.05	
Parathion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Chlorfenvinphos	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
trans-Chlordane	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
cis-Chlordane	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Ethion	<0.01 µg/l	TM344		<0.05	<0.1		<0.05	
Carbophenothion	<0.01 µg/l	TM344		<0.05	<0.2		<0.05	
Triazophos	<0.01 µg/l	TM344		<0.05	<0.2		<0.05	
Phosalone	<0.01 µg/l	TM344		<0.05	<0.2		<0.05	
Azinphos methyl	<0.02 µg/l	TM344		<0.1	<0.2		<0.1	
Azinphos ethyl	<0.02 µg/l	TM344		<0.1	<0.2		<0.1	
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.5	<0.5		<0.5	
Clopyralid	<0.04 µg/l	TM411		<0.2	<0.2		<0.2	
MCPA	<0.05 µg/l	TM411		<0.25	<0.25		<0.25	
Mecoprop	<0.04 µg/l	TM411		<0.2	<0.2		<0.2	
Dicamba	<0.04 µg/l	TM411		<0.2	<0.2		<0.2	
MCPB	<0.05 µg/l	TM411		<0.25	<0.25		<0.25	



CERTIFICATE OF ANALYSIS

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend			Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
# ISO17025 accredited.	M mCERTS accredited.	aq Aqueous / settled sample.	Depth (m)	F-DU6TXB-54AR	F-M78TXB-S0ZL	F-ARFTXB-ONVS	F-IVCTXB-UY4J	F-8ABTXB-Q5R8	F-4JETXB-U8XK
dis.filt Dissolved / filtered sample.		tot.unfilt Total / unfiltered sample.	Sample Type	5.00	10.00	7.00	6.00	9.00	16.00
* Subcontracted - refer to subcontractor report for accreditation status.		** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Sampled	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
(F) Trigger breach confirmed			Sample Time	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022
1-4* Sample deviation (see appendix)			Date Received	12:15	11:15	16:45	15:00	13:45	15:50
			SDG Ref	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022
			Lab Sample No.(s)	221118-151	221118-151	221118-151	221118-151	221118-151	221118-151
			AGS Reference	27185514	27185549	27185565	27185588	27185611	27185631
				EW1	EW1	EW1	EW1	EW1	EW1
Component	LOD/Units	Method							
2,4-DB	<0.1 µg/l	TM411		<0.5	<0.5		<0.5		
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.25	<0.25		<0.25		
Dichlorprop	<0.1 µg/l	TM411		<0.5	<0.5		<0.5		
Triclopyr	<0.05 µg/l	TM411		<0.25	<0.25		<0.25		
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.5	<0.5		<0.5		
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.25	<0.25		<0.25		
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.25	<0.25		<0.25		
Bromoxynil	<0.04 µg/l	TM411		<0.2	<0.2		<0.2		
Benzazolin	<0.04 µg/l	TM411		<0.2	<0.2		<0.2		
loxynil	<0.05 µg/l	TM411		<0.25	<0.25		<0.25		
Pentachlorophenol	<0.04 µg/l	TM411		<0.2	<0.2		<0.2		
Fluoroxypypr	<0.1 µg/l	TM411		<0.5	<0.5		<0.5		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	SWD102				SWD104				SWD105				SWD106					
#	ISO17025 accredited.		SWD102	F-XGATXB-U8IH	0.00 - 0.00	Surface Water (SW)	SWD104	F-T40TXB-RK1Q	0.00 - 0.00	Surface Water (SW)	SWD105	F-9VYSXB-L3CD	0.00 - 0.00	Surface Water (SW)	SWD106	F-SNXSXB-7TNT	0.00 - 0.00	Surface Water (SW)		
M	mCERTS accredited.	Depth (m)	16/11/2022	12:40	18/11/2022	221118-151	27185649	EW1	16/11/2022	09:55	18/11/2022	221118-151	27185666	EW1	16/11/2022	09:15	18/11/2022	221118-151	27185633	EW1
aq	Aqueous / settled sample.	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
diss.filt	Dissolved / filtered sample.																			
tot.unfilt	Total / unfiltered sample.																			
* Subcontracted - refer to subcontractor report for accreditation status.																				
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery																				
(F) Trigger breach confirmed																				
1-4*# Sample deviation (see appendix)																				
Component	LOD/Units	Method																		
Organic Carbon, Total	<3 mg/l	TM090	10.2	#	10.1	#	9.24	#	10.4	#										
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.015	#	<0.01	#	0.228	#	0.345	#										
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	0.0193	#	<0.01	#	0.293	#	0.444	#										
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	#	<0.003	#	<0.003	#	0.00623	#										
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.16	#	1.31	#	1.13	#	1.82	#										
Boron (diss.filt)	<10 µg/l	TM152	658	#	267	#	306	#	370	#										
Cadmium (diss.filt)	<0.08 µg/l	TM152	0.125	#	<0.08	#	<0.08	#	<0.08	#										
Chromium (diss.filt)	<1 µg/l	TM152	<1	#	2.05	#	<1	#	6.23	#										
Copper (diss.filt)	<0.3 µg/l	TM152	1.18	#	1.3	#	1.6	#	1.38	#										
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	#	<0.2	#	<0.2	#	<0.2	#										
Nickel (diss.filt)	<0.4 µg/l	TM152	3.59	#	1.69	#	1.46	#	1.51	#										
Selenium (diss.filt)	<1 µg/l	TM152	1.87	#	<1	#	1.05	#	<1	#										
Zinc (diss.filt)	<1 µg/l	TM152	1.1	#	2.14	#	2.54	#	2.1	#										
Calcium (Dis.Filt)	<0.2 mg/l	TM152	302	#	131	#	121	#	134	#										
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.165	#	0.237	#	0.561	#	0.653	#										
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	891	#	388	#	393	#	388	#										
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	#	<100	#	<100	#	110	#										
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	#	<100	#	<100	#	110	#										
Mercury (diss.filt)	<0.01 µg/l	TM183	0.0114	#	<0.01	#	<0.01	#	0.0111	#										
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	#	0.409	#	0.386	#	0.343	#										
Sulphate	<2 mg/l	TM184	581	#	183	#	193	#	201	#										
Nitrate as NO3	<0.3 mg/l	TM184	0.375	#	5.48	#	5.83	#	5.98	#										
Phenol (low level)	<0.5 µg/l	TM255	<0.5	#	0.64	#	0.76	#	<0.5	#										
Cresols (low level)	<0.5 µg/l	TM255	<0.5	#	<0.5	#	<0.5	#	<0.5	#										
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	#	<0.5	#	<0.5	#	<0.5	#										
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	#	0.64	#	0.76	#	<0.5	#										
pH	<1 pH Units	TM256	7.57	#	8.26	#	8.32	#	8.29	#										
Cyanide, Total (low level)	<5 µg/l	TM279	<5	#	<5	#	<5	#	<5	#										
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	#	<2.5	#	<2.5	#	<2.5	#										
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	#	<0.003	#	<0.003	#	<0.003	#										



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.		MS-BH05 F-IVCTXB-UJ4J 6.00 Ground Water (GW)	SWD106 F-SNXSXB-7TNT 0.00 - 0.00 Surface Water (SW)				
#	ISO17025 accredited.	M	mCERTS accredited.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref
#	ISO17025 accredited.	M	mCERTS accredited.						
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-4*\$@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
GRO >C5-C10	<10 µg/l	TM245	<10	<10					
EPH (C6-C10)	<100 µg/l	TM245	<100	<100					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	AR-BH01		AR-BH02		MS-BH01		MS-BH05		MS-BH09		MS-BH21	
#	ISO17025 accredited.		F-DU6TXB-54AR	5.00	F-M78TXB-S0ZL	10.00	F-ARFTXB-ONVS	7.00	F-IVCTXB-UY4J	6.00	F-8ABTXB-Q5R8	9.00	F-4JETXB-U8XK	16.00
M	mCERTS accredited.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
aq	Aqueous / settled sample.	Depth (m)	Sample Type	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	Date Sampled	
tot.unfilt	Total / unfiltered sample.	Sample Time	Date Received	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	SDG Ref	
* Subcontracted - refer to subcontractor report for accreditation status.		Lab Sample No.(s)	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery														
(F) Trigger breach confirmed														
1-4* @ Sample deviation (see appendix)														
Component	LOD/Units	Method												
Naphthalene (aq)	<0.01 µg/l	TM178	0.0146	<0.01	<0.01	<0.01	0.0115	0.0127	<0.01	#	#	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178	0.00623	0.00624	0.0132	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	0.00888	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Pyrene (aq)	<0.005 µg/l	TM178	0.00639	0.00763	0.0248	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	#	#	#	#	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	#	#	#	#	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	<0.082	<0.082	<0.082	<0.082	<0.082	#	#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	SWD102				SWD104				SWD105				SWD106																						
#	ISO17025 accredited.		F-XGATXB-U8IH	0.00 - 0.00	Surface Water (SW)	16/11/2022	12:40	18/11/2022	221118-151	27185649	F-T40TXB-RK1Q	0.00 - 0.00	Surface Water (SW)	16/11/2022	09:55	18/11/2022	221118-151	27185666	F-9VYSXB-L3CD	0.00 - 0.00	Surface Water (SW)	16/11/2022	09:35	18/11/2022	221118-151	27185682	F-SNXSXB-7TNT	0.00 - 0.00	Surface Water (SW)	16/11/2022	09:15	18/11/2022	221118-151	27185633			
M	mCERTS accredited.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference																												
aq	Aqueous / settled sample.																																				
diss.filt	Dissolved / filtered sample.																																				
tot.unfilt	Total / unfiltered sample.																																				
* Subcontracted - refer to subcontractor report for accreditation status.																																					
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery																																					
(F) Trigger breach confirmed																																					
1-4* @ Sample deviation (see appendix)																																					
Component	LOD/Units	Method																																			
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	#	<0.01	#	<0.01	#	<0.01	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	0.014	#	0.0163	#	0.0124	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	#	0.0177	#	0.0193	#	0.0146	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	#	<0.002	#	<0.002	#	<0.002	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	#	<0.005	#	<0.005	#	<0.005	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	#	<0.082	#	<0.082	#	<0.082	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH09	SWD102	
#	ISO17025 accredited.		F-DU6TXB-54AR	F-M78TXB-S0ZL	F-ARFTXB-ONVS	F-8ABTXB-Q5R8	F-XGATXB-U8IH	
M	mCERTS accredited.		5.00	10.00	7.00	9.00	0.00 - 0.00	
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	
diss.filt	Dissolved / filtered sample.	Sample Type	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:15	11:15	16:45	13:45	12:40	
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-151	221118-151	221118-151	221118-151	221118-151	
	(F) Trigger breach confirmed	SDG Ref	27185514	27185549	27185565	27185611	27185649	
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1	
		AGS Reference						
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Methylphenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
3-Nitroaniline (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Methylphenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
Azobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
Acenaphthylene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
Acenaphthene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
Anthracene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	<4	<20	<8	<2	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		AR-BH01	AR-BH02	MS-BH01	MS-BH09	SWD102
# ISO17025 accredited. M mCERTS accredited. Aq. Aqueous / filtered sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	AR-BH01 F-DU6TXB-54AR 5.00 Ground Water (GW) 16/11/2022 12:15 18/11/2022 221118-151 27185514 EW1	AR-BH02 F-M78TXB-S0ZL 10.00 Ground Water (GW) 16/11/2022 11:15 18/11/2022 221118-151 27185549 EW1	MS-BH01 F-ARFTXB-ONVS 7.00 Ground Water (GW) 16/11/2022 16:45 18/11/2022 221118-151 27185565 EW1	MS-BH09 F-8ABTXB-Q8R8 9.00 Ground Water (GW) 16/11/2022 13:45 18/11/2022 221118-151 27185611 EW1	SWD102 F-XGATXB-U8IH 0.00 - 0.00 Surface Water (SW) 16/11/2022 12:40 18/11/2022 221118-151 27185649 EW1	
Component	LOD/Units	Method							
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Carbazole (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Chrysene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Dibenzofuran (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Diethyl phthalate (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5	<10	<50	<20	<5		
Fluoranthene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Fluorene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Pentachlorophenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Phenol (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Hexachloroethane (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Nitrobenzene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Naphthalene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Isophorone (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Phenanthrene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		
Pyrene (aq)	<1 µg/l	TM176	<1	<2	<10	<4	<1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Table with columns for Component, LOD/Units, Method, and eight sample locations (AR-BH01, AR-BH02, MS-BH01, MS-BH09, MS-BH21, SWD102). Rows include GRO Surrogate % recovery, Aliphatics >C5-C12, and Aromatics >EC5-EC7.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample Ref.	SWD104	SWD105			
#	ISO17025 accredited.		F-T40TXB-RK1Q	F-9VYSXB-L3CD			
M	mCERTS accredited.		0.00 - 0.00	0.00 - 0.00			
aq	Aqueous / settled sample.	Depth (m)	Surface Water (SW)	Surface Water (SW)			
diss.filt	Dissolved / filtered sample.	Sample Type	16/11/2022	16/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	09:55	09:35			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	18/11/2022	18/11/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-151	221118-151			
(F)	Trigger breach confirmed	SDG Ref	27185666	27185682			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1			
		AGS Reference					
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM245	101	101			
GRO >C5-C12	<50 µg/l	TM245	<50	<50	#	#	
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10			
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10			
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10			
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10			
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10			
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10			
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10			
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10			
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10			
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10			
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10			
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10			
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10			
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10			
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10			
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10			
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10			
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10	<10			
GRO >C5-C10	<10 µg/l	TM245	<10	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
#	ISO17025 accredited.		AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21		
M	mCERTS accredited.		F-DU6TXB-54AR	F-M78TXB-S0ZL	F-ARFTXB-ONVS	F-IVCTXB-UY4J	F-8ABTXB-Q5R8	F-4JETXB-U8XK		
aq	Aqueous / settled sample.		5.00	10.00	7.00	6.00	9.00	16.00		
dis.flit	Dissolved / filtered sample.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
tot.unflit	Total / unfiltered sample.		16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022	16/11/2022		
	* Subcontracted - refer to subcontractor report for accreditation status.		12:15	11:15	16:45	15:00	13:45	15:50		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022	18/11/2022		
	(F) Trigger breach confirmed		221118-151	221118-151	221118-151	221118-151	221118-151	221118-151		
	1-4* @ Sample deviation (see appendix)		27185514	27185549	27185565	27185588	27185611	27185631		
			EW1	EW1	EW1	EW1	EW1	EW1		
			Lab Sample No.(s)	AGS Reference						
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208	111	119	113			111		
Toluene-d8**	%	TM208	100	102	101			100		
4-Bromofluorobenzene**	%	TM208	95.3	93.6	96.8			97.4		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1			<1		
Chloromethane	<1 µg/l	TM208	<1	<1	<1			<1		
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1			<1		
Bromomethane	<1 µg/l	TM208	<1	<1	<1			<1		
Chloroethane	<1 µg/l	TM208	<1	<1	<1			<1		
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1			<1		
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			<1		
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1			<1		
Dichloromethane	<3 µg/l	TM208	<3	<4	<3			<3		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1		<1	<1	
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			<1		
1,1-Dichloroethane	<1 µg/l	TM208	<1	<1	<1			<1		
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<1	<1			<1		
2,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			<1		
Bromochloromethane	<1 µg/l	TM208	<1	<1	<1			<1		
Chloroform	<1 µg/l	TM208	<1	<1	<1			<1		
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1			<1		
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			<1		
Carbon tetrachloride	<1 µg/l	TM208	<1	<1	<1			<1		
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1			<1		
Benzene	<1 µg/l	TM208	<1	<1	<1	<1		<1	<1	
Trichloroethene	<1 µg/l	TM208	<1	<1	<1			<1		
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			<1		
Dibromomethane	<1 µg/l	TM208	<1	<1	<1			<1		
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1			<1		
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			<1		
Toluene	<1 µg/l	TM208	<1	<1	<1	<1		<1	<1	
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1			<1		
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1			<1		
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1	<1			<1		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4# Sample deviation (see appendix)		AR-BH01 F-DU6TXB-54AR 5.00 Ground Water (GW) 16/11/2022 12:15 18/11/2022 221118-151 27185514 EW1	AR-BH02 F-M78TXB-S0ZL 10.00 Ground Water (GW) 16/11/2022 11:15 18/11/2022 221118-151 27185549 EW1	MS-BH01 F-ARFTXB-ONVS 7.00 Ground Water (GW) 16/11/2022 16:45 18/11/2022 221118-151 27185565 EW1	MS-BH05 F-IVCTXB-UY4J 6.00 Ground Water (GW) 16/11/2022 15:00 18/11/2022 221118-151 27185588 EW1	MS-BH09 F-8ABTXB-Q5R8 9.00 Ground Water (GW) 16/11/2022 13:45 18/11/2022 221118-151 27185611 EW1	MS-BH21 F-4JETXB-U8XK 16.00 Ground Water (GW) 16/11/2022 15:50 18/11/2022 221118-151 27185631 EW1	
Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1		<1	
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1		<1	
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1	<1		<1	
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1		<1	
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Styrene	<1 µg/l	TM208	<1	<1	<1		<1	
Bromofom	<1 µg/l	TM208	<1	<1	<1		<1	
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1		<1	
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1		<1	
Bromobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
Propylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1		<1	
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1		<1	
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1		<1	
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
n-Butylbenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1		<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1		<1	
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1		<1	
Naphthalene	<1 µg/l	TM208	<1	<1	<1		<1	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1		<1	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Table with columns: Results Legend, Customer Sample Ref., AR-BH01, AR-BH02, MS-BH01, MS-BH05, MS-BH09, MS-BH21, Component, LOD/Units, Method. Rows include 'Sum of detected Xylenes' and 'Sum of BTEX' with values like '<2 µg/l' and '<5 µg/l'.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SWD102	SWD104	SWD105	SWD106
#	ISO17025 accredited.		F-XGATXB-U8IH	F-T40TXB-RK1Q	F-9VYSXB-L3CD	F-SNXSXB-7TNT
M	mCERTS accredited.		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
aq	Aqueous / settled sample.	Depth (m)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
dis.s.filt	Dissolved / filtered sample.	Sample Type	16/11/2022	16/11/2022	16/11/2022	16/11/2022
tot.unfilt	Total / unfiltered sample.	Date Sampled	12:40	09:55	09:35	09:15
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	18/11/2022	18/11/2022	18/11/2022	18/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-151	221118-151	221118-151	221118-151
	(F) Trigger breach confirmed	SDG Ref	27185649	27185666	27185682	27185633
	1-4*§@ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1
		AGS Reference				
Component	LOD/Units	Method				
Dibromofluoromethane**	%	TM208	111			
Toluene-d8**	%	TM208	100			
4-Bromofluorobenzene**	%	TM208	96.6			
Dichlorodifluoromethane	<1 µg/l	TM208	<1			
Chloromethane	<1 µg/l	TM208	<1			
Vinyl chloride	<1 µg/l	TM208	<1			
Bromomethane	<1 µg/l	TM208	<1			
Chloroethane	<1 µg/l	TM208	<1			
Trichlorofluoromethane	<1 µg/l	TM208	<1			
1,1-Dichloroethene	<1 µg/l	TM208	<1			
Carbon disulphide	<1 µg/l	TM208	<1			
Dichloromethane	<3 µg/l	TM208	<3			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1			
1,1-Dichloroethane	<1 µg/l	TM208	<1			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1			
2,2-Dichloropropane	<1 µg/l	TM208	<1			
Bromochloromethane	<1 µg/l	TM208	<1			
Chloroform	<1 µg/l	TM208	<1			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1			
1,1-Dichloropropene	<1 µg/l	TM208	<1			
Carbontetrachloride	<1 µg/l	TM208	<1			
1,2-Dichloroethane	<1 µg/l	TM208	<1			
Benzene	<1 µg/l	TM208	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208	<1			
1,2-Dichloropropane	<1 µg/l	TM208	<1			
Dibromomethane	<1 µg/l	TM208	<1			
Bromodichloromethane	<1 µg/l	TM208	<1			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1			
Toluene	<1 µg/l	TM208	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1			
1,3-Dichloropropane	<1 µg/l	TM208	<1			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SWD102	SWD104	SWD105	SWD106		
# ISO17025 accredited. M mCERTS accredited. sq. Aqueous / settled sample. dis.filt. Dissolved / filtered sample. tot.unfilt. Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	SWD102 F-XGATXB-U8IH 0.00 - 0.00 Surface Water (SW) 16/11/2022 12:40 18/11/2022 221118-151 27185649 EW1	SWD104 F-T40TXB-RK1Q 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:55 18/11/2022 221118-151 27185666 EW1	SWD105 F-9VYSXB-L3CD 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:35 18/11/2022 221118-151 27185682 EW1	SWD106 F-SNXSXB-7TNT 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:15 18/11/2022 221118-151 27185533 EW1		
Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208	<1	#				
Dibromochloromethane	<1 µg/l	TM208	<1	#				
1,2-Dibromoethane	<1 µg/l	TM208	<1	#				
Chlorobenzene	<1 µg/l	TM208	<1	#				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#				
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Styrene	<1 µg/l	TM208	<1	#				
Bromofom	<1 µg/l	TM208	<1	#				
Isopropylbenzene	<1 µg/l	TM208	<1	#				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#				
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#				
Bromobenzene	<1 µg/l	TM208	<1	#				
Propylbenzene	<1 µg/l	TM208	<1	#				
2-Chlorotoluene	<1 µg/l	TM208	<1	#				
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#				
4-Chlorotoluene	<1 µg/l	TM208	<1	#				
tert-Butylbenzene	<1 µg/l	TM208	<1	#				
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#				
sec-Butylbenzene	<1 µg/l	TM208	<1	#				
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#				
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#				
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#				
n-Butylbenzene	<1 µg/l	TM208	<1	#				
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	#				
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#				
Hexachlorobutadiene	<1 µg/l	TM208	<1	#				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#				
Naphthalene	<1 µg/l	TM208	<1	#				
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	#				
1,3,5-Trichlorobenzene	<1 µg/l	TM208	<1	#				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SWD102	SWD104	SWD105	SWD106		
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filter Dissolved / filtered sample. tot.unfiltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed. 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-XGATXB-U8IH 0.00 - 0.00 Surface Water (SW) 16/11/2022 12:40 18/11/2022 221118-151 27185649 EW1	F-T40TXB-RK1Q 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:55 18/11/2022 221118-151 27185666 EW1	F-9VYSXB-L3CD 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:35 18/11/2022 221118-151 27185682 EW1	F-SNXSB-7TNT 0.00 - 0.00 Surface Water (SW) 16/11/2022 09:15 18/11/2022 221118-151 27185533 EW1		
Component	LOD/Units	Method						
Sum of detected Xylenes	<2 µg/l	TM208	<2	<2	<2			
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-151
Client Ref.: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	27185514	27185549	27185565	27185588	27185611	27185631	27185649	27185666	27185682	27185533
	AR-BH01	AR-BH02	MS-BH01	MS-BH05	MS-BH09	MS-BH21	SWD102	SWD104	SWD105	SWD106
	EW1	EW1	EW1	EW1	EW1	EW1	EW1	EW1	EW1	EW1
	5.00	10.00	7.00	6.00	9.00	16.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water	Surface Water	Surface Water
Acid Herbicides by GCMS		02-Dec-2022	02-Dec-2022		02-Dec-2022					
Ammonium Low	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022
Anions by Kone (w)	24-Nov-2022	24-Nov-2022	24-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	24-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022
Chromium III	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Dissolved Metals by ICP-MS	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	24-Nov-2022	24-Nov-2022	23-Nov-2022	24-Nov-2022
EPH (DRO) (C10-C40) Aqueous (W)	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	29-Nov-2022	25-Nov-2022
EPH CWG (Aliphatic) Aqueous GC (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022		28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	
EPH CWG (Aromatic) Aqueous GC (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022		28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	
GRO by GC-FID (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Cyanide (W)	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022	22-Nov-2022
Low Level Hexavalent Chromium (w)	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022
Low Level Phenols by HPLC (W)	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	28-Nov-2022	29-Nov-2022	29-Nov-2022	28-Nov-2022	29-Nov-2022
Mercury Dissolved	24-Nov-2022	24-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Nitrite by Kone (w)	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022
PAH Spec MS - Aqueous (W)	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022
Pesticides (Suite I) by GCMS		25-Nov-2022	25-Nov-2022		25-Nov-2022					
Pesticides (Suite II) by GCMS		02-Dec-2022	25-Nov-2022		02-Dec-2022					
pH Value	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
SVOC MS (W) - Aqueous	24-Nov-2022	24-Nov-2022	24-Nov-2022		24-Nov-2022		25-Nov-2022			
Total EPH (aq)	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	26-Nov-2022	29-Nov-2022	25-Nov-2022
Total Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022
Total Organic and Inorganic Carbon	20-Nov-2022	21-Nov-2022	21-Nov-2022	20-Nov-2022	20-Nov-2022	20-Nov-2022	21-Nov-2022	20-Nov-2022	20-Nov-2022	20-Nov-2022
TPH CWG (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022		28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	28-Nov-2022	
VOC MS (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221118-151
Client Ref: F212561

Report Number: 670796
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 29 November 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221118-120
Your Reference: F212561
Location: Keadby 3
Report No: 670168
Order Number: 386/121917/CP

We received 3 samples on Wednesday November 16, 2022 and 3 of these samples were scheduled for analysis which was completed on Tuesday November 29, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

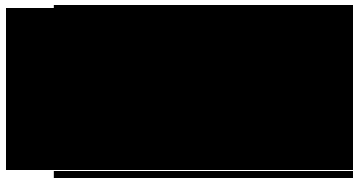
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27184286	DUP-BH01	EW1	5.00	14/11/2022
27184299	MS-BH02	EW1	8.50	14/11/2022
27184315	MS-BH19	EW1	5.50	14/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

27184315		MS-BH19		EW1		5.50		Vial (ALE297)		GW	
								NaOH (ALE245)		GW	
								HNO3 Unfiltered (ALE204)		GW	
								HNO3 Filtered (ALE204)		GW	
								H2SO4 (ALE244)		GW	
									X		
									X		
									X		
									X		
									X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Results Legend X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)												271842986												271842999												271843115
	Customer Sample Reference												DUP-BH01												MS-BH02												MS-BH19
	AGS Reference												EW1												EW1												EW1
	Depth (m)												5.00												8.50												5.50
	Container	0.5l glass bottle (ALE227)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	500ml Plastic (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	PTFE/PE (ALE219)	250ml Amber Gl. (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	PTFE/PE (ALE219)	250ml Amber Gl. (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	PTFE/PE (ALE219)	250ml Amber Gl. (ALE208)	500ml Plastic (ALE208)						
	Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW					
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1																	X																		
Total EPH (aq)	All	NDPs: 0 Tests: 3		X															X													X					
Total Metals by ICP-MS	All	NDPs: 0 Tests: 3														X														X							
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 3						X																							X						
TPH CWG (W)	All	NDPs: 0 Tests: 3		X																												X					
VOC MS (W)	All	NDPs: 0 Tests: 3																	X													X					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH19		
# ISO17025 accredited.			F-KKNPXB-OP5Y	F-1ZPPXB-SO74	F-A7NXPB-0AU2		
M mCERTS accredited.			5.00	8.50	5.50		
aq Aqueous / settled sample.		Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
diss.filt Dissolved / filtered sample.		Sample Type	14/11/2022	14/11/2022	14/11/2022		
tot.unfilt Total / unfiltered sample.		Date Sampled	14:43	15:35	14:35		
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	16/11/2022	16/11/2022	16/11/2022		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221118-120	221118-120	221118-120		
(F) Trigger breach confirmed		SDG Ref	27184286	27184299	27184315		
1-4*§@ Sample deviation (see appendix)		Lab Sample No.(s)	EW1	EW1	EW1		
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	18 #	15.9 #	18 #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	3.78 #	3.56 #	3.74 #		
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	4.85 #	4.58 #	4.8 #		
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003		
Arsenic (diss.filt)	<0.5 µg/l	TM152	117 #	169 #	120 #		
Boron (diss.filt)	<10 µg/l	TM152	67.2 #	83.9 #	63.1 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #		
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #		
Nickel (diss.filt)	<0.4 µg/l	TM152	5.24 #	1.19 #	5.49 #		
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #		
Zinc (diss.filt)	<1 µg/l	TM152	2.08 #	3.23 #	2.24 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	236 #	171 #	235 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152	61.1 #	65.9 #	62.2 #		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	3980	614	3900		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	178 #	<100 #	226 #		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	178	<100	226		
Mercury (diss.filt)	<0.01 µg/l	TM183	0.0127 #	<0.01 #	<0.01 #		
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #	<0.05 #	<0.05 #		
Sulphate	<2 mg/l	TM184	516 #	352 #	521 #		
Nitrate as NO3	<0.3 mg/l	TM184	<0.3 #	<0.3 #	<0.3 #		
Sulphate as SO4 (BRE)	<0.002 g/l	TM184		0.352 #	0.521 #		
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5		
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5		
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5		
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5		
pH	<1 pH Units	TM256	7.1 #	6.73 #	6.98 #		
Cyanide, Total (low level)	<5 µg/l	TM279	<5 #	<5 #	<5 #		
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 #	<2.5 #	<2.5 #		
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003 #	<0.003 #	<0.003 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH19			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.flit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-KKNPXB-OP5Y 5.00 Ground Water (GW) 14/11/2022 14:43 16/11/2022 221118-120 27184286 EW1	F-1ZPPXB-SO74 8.50 Ground Water (GW) 14/11/2022 15:35 16/11/2022 221118-120 27184299 EW1	F-A7NPXB-0AU2 5.50 Ground Water (GW) 14/11/2022 14:35 16/11/2022 221118-120 27184315 EW1			
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.1 #	0.018 #	<0.2 #			
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Anthracene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0922 #	0.00707 #	0.135 #			
Fluorene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Chrysene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Pyrene (aq)	<0.005 µg/l	TM178	<0.05 #	0.00532 #	<0.1 #			
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.02 #	<0.002 #	<0.04 #			
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.05 #	<0.005 #	<0.1 #			
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.82 #	<0.082 #	<1.64 #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	MS-BH02					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-1ZPPXB-S074					
M	mCERTS accredited.		8.50					
aq	Aqueous / settled sample.		Ground Water (GW)					
diss.filt	Dissolved / filtered sample.		14/11/2022					
tot.unfilt	Total / unfiltered sample.		15:35					
*	Subcontracted - refer to subcontractor report for accreditation status.		16/11/2022					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221118-120					
(F)	Trigger breach confirmed		27184299					
1-4*§	Sample deviation (see appendix)		EW1					
Component	LOD/Units		Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<8	#				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<8	#				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<8	#				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<8	#				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<8	#				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<8	#				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<8	#				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<8	#				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<8	#				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<8	#				
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<8	#				
2-Chlorophenol (aq)	<1 µg/l	TM176	<8	#				
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<8	#				
2-Methylphenol (aq)	<1 µg/l	TM176	<8	#				
2-Nitroaniline (aq)	<1 µg/l	TM176	<8	#				
2-Nitrophenol (aq)	<1 µg/l	TM176	<8	#				
3-Nitroaniline (aq)	<1 µg/l	TM176	<8	#				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<8	#				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<8	#				
4-Chloroaniline (aq)	<1 µg/l	TM176	<8	#				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<8	#				
4-Methylphenol (aq)	<1 µg/l	TM176	<8	#				
4-Nitroaniline (aq)	<1 µg/l	TM176	<8	#				
4-Nitrophenol (aq)	<1 µg/l	TM176	<8	#				
Azobenzene (aq)	<1 µg/l	TM176	<8	#				
Acenaphthylene (aq)	<1 µg/l	TM176	<8	#				
Acenaphthene (aq)	<1 µg/l	TM176	<8	#				
Anthracene (aq)	<1 µg/l	TM176	<8	#				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<8	#				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<8	#				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<16	#				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<8	#				
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<8	#				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	MS-BH02 F-1ZPPXB-S074 8.50 Ground Water (GW) 14/11/2022 15:35 16/11/2022 221118-120 27184299 EW1				
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<8	#			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<8	#			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<8	#			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<8	#			
Carbazole (aq)	<1 µg/l	TM176	<8	#			
Chrysene (aq)	<1 µg/l	TM176	<8	#			
Dibenzofuran (aq)	<1 µg/l	TM176	<8	#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<8	#			
Diethyl phthalate (aq)	<1 µg/l	TM176	<8	#			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<8	#			
Dimethyl phthalate (aq)	<1 µg/l	TM176	<8	#			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<40	#			
Fluoranthene (aq)	<1 µg/l	TM176	<8	#			
Fluorene (aq)	<1 µg/l	TM176	<8	#			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<8	#			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<8	#			
Pentachlorophenol (aq)	<1 µg/l	TM176	<8	#			
Phenol (aq)	<1 µg/l	TM176	<8	#			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<8	#			
Hexachloroethane (aq)	<1 µg/l	TM176	<8	#			
Nitrobenzene (aq)	<1 µg/l	TM176	<8	#			
Naphthalene (aq)	<1 µg/l	TM176	<8	#			
Isophorone (aq)	<1 µg/l	TM176	<8	#			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<8	#			
Phenanthrene (aq)	<1 µg/l	TM176	<8	#			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<8	#			
Pyrene (aq)	<1 µg/l	TM176	<8	#			



CERTIFICATE OF ANALYSIS

Validated

 SDG: 221118-120
 Client Ref.: F212561

 Report Number: 670168
 Location: Keadby 3

Superseded Report:

TPH CWG (W)

Results Legend		Customer Sample Ref.	DUP-BH01 F-KKNPXB-OP5Y 5.00 Ground Water (GW)	MS-BH02 F-1ZPPXB-SO74 8.50 Ground Water (GW)	MS-BH19 F-A7NXPB-0AU2 5.50 Ground Water (GW)				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
* Subcontracted - refer to subcontractor report for accreditation status.									
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)									
Component	LOD/Units	Method							
GRO Surrogate % recovery**	%	TM245	94	92	90				
GRO >C5-C12	<50 µg/l	TM245	<50	<50	<50	#	#	#	
Aliphatics >C5-C6	<10 µg/l	TM245	<10	<10	<10				
Aliphatics >C6-C8	<10 µg/l	TM245	<10	<10	<10				
Aliphatics >C8-C10	<10 µg/l	TM245	<10	<10	<10				
Aliphatics >C10-C12	<10 µg/l	TM245	<10	<10	<10				
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174	<10	<10	<10				
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aromatics >EC5-EC7	<10 µg/l	TM245	<10	<10	<10				
Aromatics >EC7-EC8	<10 µg/l	TM245	<10	<10	<10				
Aromatics >EC8-EC10	<10 µg/l	TM245	<10	<10	<10				
Aromatics >EC10-EC12	<10 µg/l	TM245	<10	<10	<10				
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10				
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174	<10	<10	<10				
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174	<10	<10	<10				
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174	<10	<10	<10				
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10				
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH19		
#	ISO17025 accredited.		F-KKNPXB-OP5Y	F-1ZPPXB-SO74	F-A7NPXB-0AU2		
M	mCERTS accredited.		5.00	8.50	5.50		
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
dis.s.filt	Dissolved / filtered sample.	Sample Type	14/11/2022	14/11/2022	14/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:43	15:35	14:35		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	16/11/2022	16/11/2022	16/11/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-120	221118-120	221118-120		
	(F) Trigger breach confirmed	SDG Ref	27184286	27184299	27184315		
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1		
		AGS Reference					
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208		113			
Toluene-d8**	%	TM208		99.7			
4-Bromofluorobenzene**	%	TM208		98.4			
Dichlorodifluoromethane	<1 µg/l	TM208		<1		#	
Chloromethane	<1 µg/l	TM208		<1		#	
Vinyl chloride	<1 µg/l	TM208		<1		#	
Bromomethane	<1 µg/l	TM208		<1		#	
Chloroethane	<1 µg/l	TM208		<1		#	
Trichlorofluoromethane	<1 µg/l	TM208		<1		#	
1,1-Dichloroethene	<1 µg/l	TM208		<1		#	
Carbon disulphide	<1 µg/l	TM208		<1		#	
Dichloromethane	<3 µg/l	TM208		<3		#	
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	#	#
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1		#	
1,1-Dichloroethane	<1 µg/l	TM208		<1		#	
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1		#	
2,2-Dichloropropane	<1 µg/l	TM208		<1		#	
Bromochloromethane	<1 µg/l	TM208		<1		#	
Chloroform	<1 µg/l	TM208		<1		#	
1,1,1-Trichloroethane	<1 µg/l	TM208		<1		#	
1,1-Dichloropropene	<1 µg/l	TM208		<1		#	
Carbontetrachloride	<1 µg/l	TM208		<1		#	
1,2-Dichloroethane	<1 µg/l	TM208		<1		#	
Benzene	<1 µg/l	TM208	<1	<1	<1	#	#
Trichloroethene	<1 µg/l	TM208		<1		#	
1,2-Dichloropropane	<1 µg/l	TM208		<1		#	
Dibromomethane	<1 µg/l	TM208		<1		#	
Bromodichloromethane	<1 µg/l	TM208		<1		#	
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1		#	
Toluene	<1 µg/l	TM208	<1	<1	<1	#	#
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1		#	
1,1,2-Trichloroethane	<1 µg/l	TM208		<1		#	
1,3-Dichloropropane	<1 µg/l	TM208		<1		#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	DUP-BH01 F-KKNPXB-OP5Y 5.00 Ground Water (GW) 14/11/2022 14:43 16/11/2022 221118-120 27184286 EW1	MS-BH02 F-1ZPPXB-SO74 8.50 Ground Water (GW) 14/11/2022 15:35 16/11/2022 221118-120 27184299 EW1	MS-BH19 F-A7NXPB-0AU2 5.50 Ground Water (GW) 14/11/2022 14:35 16/11/2022 221118-120 27184315 EW1			
Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208		<1	#			
Dibromochloromethane	<1 µg/l	TM208		<1	#			
1,2-Dibromoethane	<1 µg/l	TM208		<1	#			
Chlorobenzene	<1 µg/l	TM208		<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1	#			
Ethylbenzene	<1 µg/l	TM208	<1	<1	#	<1	#	#
m,p-Xylene	<1 µg/l	TM208	<1	<1	#	<1	#	#
o-Xylene	<1 µg/l	TM208	<1	<1	#	<1	#	#
Styrene	<1 µg/l	TM208		<1	#			
Bromofom	<1 µg/l	TM208		<1	#			
Isopropylbenzene	<1 µg/l	TM208		<1	#			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1	#			
1,2,3-Trichloropropane	<1 µg/l	TM208		<1	#			
Bromobenzene	<1 µg/l	TM208		<1	#			
Propylbenzene	<1 µg/l	TM208		<1	#			
2-Chlorotoluene	<1 µg/l	TM208		<1	#			
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1	#			
4-Chlorotoluene	<1 µg/l	TM208		<1	#			
tert-Butylbenzene	<1 µg/l	TM208		<1	#			
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1	#			
sec-Butylbenzene	<1 µg/l	TM208		<1	#			
4-iso-Propyltoluene	<1 µg/l	TM208		<1	#			
1,3-Dichlorobenzene	<1 µg/l	TM208		<1	#			
1,4-Dichlorobenzene	<1 µg/l	TM208		<1	#			
n-Butylbenzene	<1 µg/l	TM208		<1	#			
1,2-Dichlorobenzene	<1 µg/l	TM208		<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	#			
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1	#			
Hexachlorobutadiene	<1 µg/l	TM208		<1	#			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1	#			
Naphthalene	<1 µg/l	TM208		<1	#			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1	#			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	DUP-BH01 F-KKNPXB-OP5Y 5.00 Ground Water (GW) 14/11/2022 14:43 16/11/2022 221118-120 27184286 EW1	MS-BH02 F-1ZPPXB-SO74 8.50 Ground Water (GW) 14/11/2022 15:35 16/11/2022 221118-120 27184299 EW1	MS-BH19 F-A7NPXB-0AU2 5.50 Ground Water (GW) 14/11/2022 14:35 16/11/2022 221118-120 27184315 EW1			
# ISO17025 accredited.	M mCERTS accredited.							
sq. Aqueous / settled sample.	dis.filt. Dissolved / filtered sample.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)
tot.unfilt. Total / unfiltered sample.		* Subcontracted - refer to subcontractor report for accreditation status.						
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		(F) Trigger breach confirmed						
1-4* Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
Sum of detected Xylenes	<2 µg/l	TM208	<2	<2	<2			
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-120
Client Ref.: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27184286	27184299	27184315
Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH19
AGS Ref.	EW1	EW1	EW1
Depth	5.00	8.50	5.50
Type	Ground Water	Ground Water	Ground Water

Ammonium Low	25-Nov-2022	25-Nov-2022	25-Nov-2022
Anions by Kone (w)	19-Nov-2022	19-Nov-2022	19-Nov-2022
Chromium III	23-Nov-2022	23-Nov-2022	23-Nov-2022
Dissolved Metals by ICP-MS	23-Nov-2022	23-Nov-2022	23-Nov-2022
EPH (DRO) (C10-C40) Aqueous (W)	26-Nov-2022	26-Nov-2022	26-Nov-2022
EPH CWG (Aliphatic) Aqueous GC (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022
EPH CWG (Aromatic) Aqueous GC (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022
GRO by GC-FID (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Cyanide (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Hexavalent Chromium (w)	21-Nov-2022	21-Nov-2022	21-Nov-2022
Low Level Phenols by HPLC (W)	28-Nov-2022	29-Nov-2022	28-Nov-2022
Mercury Dissolved	23-Nov-2022	23-Nov-2022	24-Nov-2022
Nitrite by Kone (w)	19-Nov-2022	19-Nov-2022	19-Nov-2022
PAH Spec MS - Aqueous (W)	25-Nov-2022	25-Nov-2022	25-Nov-2022
pH Value	23-Nov-2022	23-Nov-2022	23-Nov-2022
SVOC MS (W) - Aqueous		22-Nov-2022	
Total EPH (aq)	26-Nov-2022	26-Nov-2022	26-Nov-2022
Total Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022
Total Organic and Inorganic Carbon	20-Nov-2022	20-Nov-2022	20-Nov-2022
TPH CWG (W)	28-Nov-2022	28-Nov-2022	28-Nov-2022
VOC MS (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221118-120
Client Ref: F212561

Report Number: 670168
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	29 November 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221118-116
Your Reference:	F212561
Location:	Keadby 3
Report No:	670167
Order Number:	386/121917/CP

We received 6 samples on Thursday November 17, 2022 and 6 of these samples were scheduled for analysis which was completed on Tuesday November 29, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

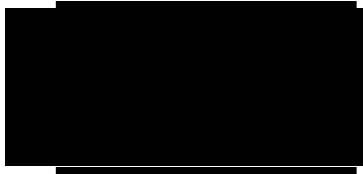
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27184077	BH101	EW1	19.00	15/11/2022
27184090	BH102	EW1	28.00	15/11/2022
27184104	BH103	EW1	27.00	15/11/2022
27184119	BH104	EW1	8.50	15/11/2022
27184137	DS111	EW1	4.50	15/11/2022
27184153	DUP-BH02	EW1	5.00	15/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Results Legend Test No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type										
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	Sample Type		
		27184077	BH101	EW1	19.00																					GW	
		27184090	BH102	EW1	28.00																						GW
		27184104	BH103	EW1	27.00																						GW
																											GW
Ammonium Low	All	NDPs: 0 Tests: 6																									
Anions by Kone (w)	All	NDPs: 0 Tests: 6																									
Chromium III	All	NDPs: 0 Tests: 6																									
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6																									
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 6																									
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 2																									
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 2																									
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6																									
Low Level Cyanide (W)	All	NDPs: 0 Tests: 6																									
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 6																									
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 6																									
Mercury Dissolved	All	NDPs: 0 Tests: 6																									
Nitrite by Kone (w)	All	NDPs: 0 Tests: 6																									
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 6																									
pH Value	All	NDPs: 0 Tests: 6																									

27184137	DS111	EW1	4.50	Vial (ALE297)	GW																				
				NaOH (ALE245)	GW																				
				HNO3 Unfiltered (ALE204)	GW																				
				HNO3 Filtered (ALE204)	GW																				
				H2SO4 (ALE244)	GW					X															
				500ml Plastic (ALE208)	GW					X															
				250ml Amber Gl. PTFE/PE (ALE219)	GW											X									
				0.5l glass bottle (ALE227)	GW											X									
				Vial (ALE297)	GW															X					
				NaOH (ALE245)	GW													X							
27184119	BH104	EW1	8.50	HNO3 Unfiltered (ALE204)	GW																				
				HNO3 Filtered (ALE204)	GW							X													
				H2SO4 (ALE244)	GW									X											
				500ml Plastic (ALE208)	GW																				
				250ml Amber Gl. PTFE/PE (ALE219)	GW																				
				0.5l glass bottle (ALE227)	GW																				
				Vial (ALE297)	GW																				
				NaOH (ALE245)	GW															X					
				HNO3 Unfiltered (ALE204)	GW																				
				HNO3 Filtered (ALE204)	GW																				
27184104	BH103	EW1	27.00	Vial (ALE297)	GW																				
				NaOH (ALE245)	GW																				
				HNO3 Unfiltered (ALE204)	GW																				
				HNO3 Filtered (ALE204)	GW																				
				H2SO4 (ALE244)	GW																				
				500ml Plastic (ALE208)	GW																				
				250ml Amber Gl. PTFE/PE (ALE219)	GW																				
				0.5l glass bottle (ALE227)	GW																				
				Vial (ALE297)	GW																				
				NaOH (ALE245)	GW																				
HNO3 Unfiltered (ALE204)	GW																								
HNO3 Filtered (ALE204)	GW																								
H2SO4 (ALE244)	GW																								

27184137	DS111	EW1	4.50	Vial (ALE297)	GW												X				
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW						X										
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW											X					
				500ml Plastic (ALE208)	GW																
				250ml Amber Gl. PTFE/PE (ALE219)	GW																
				0.5l glass bottle (ALE227)	GW					X											
				Vial (ALE297)	GW																X
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
H2SO4 (ALE244)	GW																				
500ml Plastic (ALE208)	GW																				
250ml Amber Gl. PTFE/PE (ALE219)	GW																				
0.5l glass bottle (ALE227)	GW																				
Vial (ALE297)	GW																X				
NaOH (ALE245)	GW																				
HNO3 Unfiltered (ALE204)	GW																				
HNO3 Filtered (ALE204)	GW																				
H2SO4 (ALE244)	GW																				
500ml Plastic (ALE208)	GW																				
250ml Amber Gl. PTFE/PE (ALE219)	GW																				
0.5l glass bottle (ALE227)	GW																				
Vial (ALE297)	GW																				
NaOH (ALE245)	GW																				
HNO3 Unfiltered (ALE204)	GW																				
HNO3 Filtered (ALE204)	GW																				
H2SO4 (ALE244)	GW																				
27184104	BH103	EW1	27.00	Vial (ALE297)	GW																
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW																
				500ml Plastic (ALE208)	GW																
				250ml Amber Gl. PTFE/PE (ALE219)	GW																
				0.5l glass bottle (ALE227)	GW																
				Vial (ALE297)	GW																
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW																
				500ml Plastic (ALE208)	GW																
				250ml Amber Gl. PTFE/PE (ALE219)	GW																
				0.5l glass bottle (ALE227)	GW																
				Vial (ALE297)	GW																
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW																
				500ml Plastic (ALE208)	GW																
				250ml Amber Gl. PTFE/PE (ALE219)	GW																
				0.5l glass bottle (ALE227)	GW																
				Vial (ALE297)	GW																
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW																
				500ml Plastic (ALE208)	GW																
				250ml Amber Gl. PTFE/PE (ALE219)	GW																
				0.5l glass bottle (ALE227)	GW																
				Vial (ALE297)	GW																
				NaOH (ALE245)	GW																
				HNO3 Unfiltered (ALE204)	GW																
				HNO3 Filtered (ALE204)	GW																
				H2SO4 (ALE244)	GW																



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;">X Test</div> <div style="display: flex; align-items: center;">N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)								
	Customer Sample Reference								
	AGS Reference								
	Depth (m)								
	Container	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber GI. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)
	Sample Type	GW	GW	GW	GW	GW	GW	GW	
Ammonium Low	All	NDPs: 0 Tests: 6			X				
Anions by Kone (w)	All	NDPs: 0 Tests: 6		X					
Chromium III	All	NDPs: 0 Tests: 6			X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6			X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 6	X						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 6						X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 6						X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 6		X					
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 6			X				
Mercury Dissolved	All	NDPs: 0 Tests: 6			X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 6						X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 6	X						
pH Value	All	NDPs: 0 Tests: 6			X				
Total EPH (aq)	All	NDPs: 0 Tests: 6	X						
Total Metals by ICP-MS	All	NDPs: 0 Tests: 6						X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)									
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	27184153									
	DUP-BH02									
	EW1									
	5.00									
	Container	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber GI. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	
	Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 6			X					
VOC MS (W)	All	NDPs: 0 Tests: 6							X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH02
#	ISO17025 accredited.		BH101	BH102	BH103	BH104	DS111	DUP-BH02
M	mCERTS accredited.		F-8GERXB-YTP4	F-2JIRXB-EYAT	F-FZIRXB-JGTI	F-YOKRXB-38IJ	F-106RXB-TSSS	F-CFFRXB-47UJ
aq	Aqueous / settled sample.		19.00	28.00	27.00	8.50	4.50	5.00
diss.filt	Dissolved / filtered sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
tot.unfilt	Total / unfiltered sample.	Sample Type	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022
	Subcontracted - refer to subcontractor report for accreditation status.	Date Sampled	13:15	14:20	15:30	16:30	10:30	12:00
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Time	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
(F)	Trigger breach confirmed	Date Received	221118-116	221118-116	221118-116	221118-116	221118-116	221118-116
1-4*§@	Sample deviation (see appendix)	SDG Ref	27184077	27184090	27184104	27184119	27184137	27184153
		Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1	EW1
		AGS Reference						
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	12.5	102	40.8	3.18	3.66	10.8
			#	#	#	#	#	#
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.68	3.06	1.89	0.191	0.647	2.75
			#	#	#	#	#	#
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	3.45	3.94	2.43	0.246	0.832	3.53
			#	#	#	#	#	#
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	0.00825	<0.003	<0.003
Arsenic (diss.filt)	<0.5 µg/l	TM152	28.8	17.3	32.3	79.2	28.9	30.1
			#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152	14400	13400	24200	7940	774	14100
			#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152	0.845	1.49	0.92	0.263	0.179	0.856
			#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	8.25	<1	<1
			#	#	#	#	#	#
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	<0.3	1.86	1.06	0.355
			#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
			#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	2.47	3.98	5.5	1.96	0.924	2.93
			#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152	313	<1	1.26	80.4	84.2	306
			#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	5.95	3.99
			#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	437	488	691	123	142	429
			#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	0.269	11.6	<0.019	<0.019	0.0437
			#	#	#	#	#	#
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1030	1470	2180	340	375	1000
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	638	128	429	573	148	823
			#	#	#	#	#	#
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	638	128	429	573	148	823
Mercury (diss.filt)	<0.01 µg/l	TM183	0.0121	0.0106	0.0108	0.0104	0.0128	0.0116
			#	#	#	#	#	#
Nitrite as NO2	<0.05 mg/l	TM184	2.44	<0.05	<0.05	0.316	0.542	2.47
			#	#	#	#	#	#
Sulphate	<2 mg/l	TM184	1040	1390	1910	323	366	987
			#	#	#	#	#	#
Nitrate as NO3	<0.3 mg/l	TM184	4.52	<0.3	<0.3	<0.3	<0.3	5.04
			#	#	#	#	#	#
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	2.64	<0.5
			#	#	#	#	#	#
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	2.64	<0.5
			#	#	#	#	#	#
pH	<1 pH Units	TM256	9.09	8.13	7.28	9.31	10.9	9.11
			#	#	#	#	#	#
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5
			#	#	#	#	#	#
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
			#	#	#	#	#	#
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
			#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend			Customer Sample Ref.		BH101	BH102	BH103	BH104	DS111	DUP-BH02
#	ISO17025 accredited.				F-8GERXB-YTP4	F-2JIRXB-EYAT	F-FZIRXB-JGTI	F-YOKRXB-38IJ	F-106RXB-TSSS	F-CFFRXB-47UJ
M	mCERTS accredited.				19.00	28.00	27.00	8.50	4.50	5.00
aq	Aqueous / settled sample.		Depth (m)		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.		Sample Type		15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022
tot.unfilt	Total / unfiltered sample.		Date Sampled		13:15	14:20	15:30	16:30	10:30	12:00
	* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time		17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received		221118-116	221118-116	221118-116	221118-116	221118-116	221118-116
	(F) Trigger breach confirmed		SDG Ref		27184077	27184090	27184104	27184119	27184137	27184153
	1-4* @ Sample deviation (see appendix)		Lab Sample No.(s)		EW1	EW1	EW1	EW1	EW1	EW1
			AGS Reference							
Component	LOD/Units	Method								
Naphthalene (aq)	<0.01 µg/l	TM178	0.0995	<0.2	<0.2	0.0384	0.0337	0.11		
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.1	<0.1	0.0051	<0.005	<0.005		
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.1	<0.1	<0.005	<0.005	<0.005		
Fluoranthene (aq)	<0.005 µg/l	TM178	0.144	<0.1	<0.1	0.223	0.112	0.147		
Anthracene (aq)	<0.005 µg/l	TM178	0.00721	<0.1	<0.1	0.015	0.00729	0.0102		
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0518	<0.1	<0.1	0.0833	0.0304	0.0564		
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.1	<0.1	0.00501	<0.005	<0.005		
Chrysene (aq)	<0.005 µg/l	TM178	0.101	<0.1	<0.1	0.204	0.0935	0.105		
Pyrene (aq)	<0.005 µg/l	TM178	0.143	<0.1	<0.1	0.229	0.112	0.146		
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	0.074	<0.1	<0.1	0.136	0.0692	0.0688		
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	0.131	<0.1	<0.1	0.214	0.101	0.119		
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	0.0403	<0.1	<0.1	0.064	0.0328	0.0497		
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	0.0881	<0.04	<0.04	0.144	0.0779	0.0789		
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.1	<0.1	0.0173	0.00913	<0.005		
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	0.0795	<0.1	<0.1	0.0981	0.0502	0.076		
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	0.0429	<0.1	<0.1	0.0772	0.0497	0.0491		
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	1	<1.64	<1.64	1.55	0.779	1.02		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH103					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-FZIRXB-JGTI					
M	mCERTS accredited.		27.00					
aq	Aqueous / settled sample.		Ground Water (GW)					
diss.filt	Dissolved / filtered sample.		15/11/2022					
tot.unfilt	Total / unfiltered sample.		15:30					
*	Subcontracted - refer to subcontractor report for accreditation status.		17/11/2022					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221118-116					
(F)	Trigger breach confirmed		27184104					
1-4*§@	Sample deviation (see appendix)		EW1					
Component	LOD/Units		Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<20	#				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	#				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	#				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	#				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<20	#				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<20	#				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<20	#				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<20	#				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<20	#				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<20	#				
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<20	#				
2-Chlorophenol (aq)	<1 µg/l	TM176	<20	#				
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<20	#				
2-Methylphenol (aq)	<1 µg/l	TM176	<20	#				
2-Nitroaniline (aq)	<1 µg/l	TM176	<20	#				
2-Nitrophenol (aq)	<1 µg/l	TM176	<20	#				
3-Nitroaniline (aq)	<1 µg/l	TM176	<20	#				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<20	#				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<20	#				
4-Chloroaniline (aq)	<1 µg/l	TM176	<20	#				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<20	#				
4-Methylphenol (aq)	<1 µg/l	TM176	<20	#				
4-Nitroaniline (aq)	<1 µg/l	TM176	<20	#				
4-Nitrophenol (aq)	<1 µg/l	TM176	<20	#				
Azobenzene (aq)	<1 µg/l	TM176	<20	#				
Acenaphthylene (aq)	<1 µg/l	TM176	<20	#				
Acenaphthene (aq)	<1 µg/l	TM176	<20	#				
Anthracene (aq)	<1 µg/l	TM176	<20	#				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<20	#				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<20	#				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<40	#				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<20	#				
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<20	#				



CERTIFICATE OF ANALYSIS

SDG: 221118-116
 Client Ref.: F212561

Report Number: 670167
 Location: Keadby 3

Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH103			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*# Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-FZIRXB-JGTI 27.00 Ground Water (GW) 15/11/2022 15:30 17/11/2022 221118-116 27184104 EW1			
Component	LOD/Units	Method				
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<20	#		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<20	#		
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<20	#		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<20	#		
Carbazole (aq)	<1 µg/l	TM176	<20	#		
Chrysene (aq)	<1 µg/l	TM176	<20	#		
Dibenzofuran (aq)	<1 µg/l	TM176	<20	#		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<20	#		
Diethyl phthalate (aq)	<1 µg/l	TM176	<20	#		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<20	#		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<20	#		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<100	#		
Fluoranthene (aq)	<1 µg/l	TM176	<20	#		
Fluorene (aq)	<1 µg/l	TM176	<20	#		
Hexachlorobenzene (aq)	<1 µg/l	TM176	<20	#		
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<20	#		
Pentachlorophenol (aq)	<1 µg/l	TM176	<20			
Phenol (aq)	<1 µg/l	TM176	<20			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<20	#		
Hexachloroethane (aq)	<1 µg/l	TM176	<20	#		
Nitrobenzene (aq)	<1 µg/l	TM176	<20	#		
Naphthalene (aq)	<1 µg/l	TM176	<20	#		
Isophorone (aq)	<1 µg/l	TM176	<20	#		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<20			
Phenanthrene (aq)	<1 µg/l	TM176	<20	#		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<20	#		
Pyrene (aq)	<1 µg/l	TM176	<20	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

TPH CWG (W)

Table with 7 columns: Component, LOD/Units, Method, BH102, BH104, and two empty columns. Rows include GRO Surrogate % recovery, GRO >C5-C12, Aliphatics >C5-C6, Aliphatics >C6-C8, Aliphatics >C8-C10, Aliphatics >C10-C12, Aliphatics >C12-C16 (aq), Aliphatics >C16-C21 (aq), Aliphatics >C21-C35 (aq), Total Aliphatics >C12-C35 (aq), Aromatics >EC5-EC7, Aromatics >EC7-EC8, Aromatics >EC8-EC10, Aromatics >EC10-EC12, Aromatics >EC12-EC16 (aq), Aromatics >EC16-EC21 (aq), Aromatics >EC21-EC35 (aq), Total Aromatics >EC12-EC35 (aq), Total Aliphatics & Aromatics >C5-35 (aq), Aliphatics >C16-C35 Aqueous, GRO >C5-C10, and EPH (C6-C10).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH02
#	ISO17025 accredited.		F-8GERXB-YTP4	F-2JIRXB-EYAT	F-FZIRXB-JGTI	F-YOKRXB-38IJ	F-106RXB-TSSS	F-CFFRXB-47UJ
M	mCERTS accredited.		19.00	28.00	27.00	8.50	4.50	5.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
dis.sfil	Dissolved / filtered sample.	Sample Type	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022
tot.unfil	Total / unfiltered sample.	Date Sampled	13:15	14:20	15:30	16:30	10:30	12:00
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221118-116	221118-116	221118-116	221118-116	221118-116	221118-116
	(F) Trigger breach confirmed	SDG Ref	27184077	27184090	27184104	27184119	27184137	27184153
	1-4* Sample deviation (see appendix)	Lab Sample No.(s)	EW1	EW1	EW1	EW1	EW1	EW1
		AGS Reference						
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208			118			
Toluene-d8**	%	TM208			99.1			
4-Bromofluorobenzene**	%	TM208			90.3			
Dichlorodifluoromethane	<1 µg/l	TM208			<1	#		
Chloromethane	<1 µg/l	TM208			<1	#		
Vinyl chloride	<1 µg/l	TM208			<1	#		
Bromomethane	<1 µg/l	TM208			<1	#		
Chloroethane	<1 µg/l	TM208			<1	#		
Trichlorofluoromethane	<1 µg/l	TM208			<1	#		
1,1-Dichloroethene	<1 µg/l	TM208			<1	#		
Carbon disulphide	<1 µg/l	TM208			<1	#		
Dichloromethane	<3 µg/l	TM208			<5	#		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208	#	#	#	#	#	#
1,1-Dichloroethane	<1 µg/l	TM208			<1	#		
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	#		
2,2-Dichloropropane	<1 µg/l	TM208			<1	#		
Bromochloromethane	<1 µg/l	TM208			<1	#		
Chloroform	<1 µg/l	TM208			<1	#		
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	#		
1,1-Dichloropropene	<1 µg/l	TM208			<1	#		
Carbontetrachloride	<1 µg/l	TM208			<1	#		
1,2-Dichloroethane	<1 µg/l	TM208			<1	#		
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208	#	#	#	#	#	#
1,2-Dichloropropane	<1 µg/l	TM208			<1	#		
Dibromomethane	<1 µg/l	TM208			<1	#		
Bromodichloromethane	<1 µg/l	TM208			<1	#		
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	#		
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208	#	#	#	#	#	#
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	#		
1,3-Dichloropropane	<1 µg/l	TM208			<1	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH02
# ISO17025 accredited. M mCERTS accredited. sq Aqueous / settled sample. dis.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4* Sample deviation (see appendix)		BH101 F-8GERXB-YTP4 19.00 Ground Water (GW) 15/11/2022 13:15 17/11/2022 221118-116 27184077 EW1	BH102 F-2JIRXB-EYAT 28.00 Ground Water (GW) 15/11/2022 14:20 17/11/2022 221118-116 27184090 EW1	BH103 F-FZIRXB-JGTI 27.00 Ground Water (GW) 15/11/2022 15:30 17/11/2022 221118-116 27184104 EW1	BH104 F-YOKRXB-38J 8.50 Ground Water (GW) 15/11/2022 16:30 17/11/2022 221118-116 27184119 EW1	DS111 F-106RXB-TSSS 4.50 Ground Water (GW) 15/11/2022 10:30 17/11/2022 221118-116 27184137 EW1	DUP-BH02 F-CFFRXB-47UJ 5.00 Ground Water (GW) 15/11/2022 12:00 17/11/2022 221118-116 27184153 EW1	
Component	LOD/Units	Method						
Tetrachloroethene	<1 µg/l	TM208			<1	#		
Dibromochloromethane	<1 µg/l	TM208			<1	#		
1,2-Dibromoethane	<1 µg/l	TM208			<1	#		
Chlorobenzene	<1 µg/l	TM208			<1	#		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	#		
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
Styrene	<1 µg/l	TM208			<1	#		
Bromoform	<1 µg/l	TM208			<1	#		
Isopropylbenzene	<1 µg/l	TM208			<1	#		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	#		
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	#		
Bromobenzene	<1 µg/l	TM208			<1	#		
Propylbenzene	<1 µg/l	TM208			<1	#		
2-Chlorotoluene	<1 µg/l	TM208			<1	#		
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	#		
4-Chlorotoluene	<1 µg/l	TM208			<1	#		
tert-Butylbenzene	<1 µg/l	TM208			<1	#		
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	#		
sec-Butylbenzene	<1 µg/l	TM208			<1	#		
4-iso-Propyltoluene	<1 µg/l	TM208			<1	#		
1,3-Dichlorobenzene	<1 µg/l	TM208			<1	#		
1,4-Dichlorobenzene	<1 µg/l	TM208			<1	#		
n-Butylbenzene	<1 µg/l	TM208			<1	#		
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	#		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208			<1	#		
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	#		
Hexachlorobutadiene	<1 µg/l	TM208			<1	#		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	#		
Naphthalene	<1 µg/l	TM208			<1	#		
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	#		
1,3,5-Trichlorobenzene	<1 µg/l	TM208			<1	#		



CERTIFICATE OF ANALYSIS

ValidatedSDG: 221118-116
Client Ref.: F212561Report Number: 670167
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH02
#	ISO17025 accredited.		F-8GERXB-YTP4	F-2JIRXB-EYAT	F-FZIRXB-JGTI	F-YOKRXB-38J	F-106RXB-TSSS	F-CFFRXB-47UJ	
M	mCERTS accredited.		19.00	28.00	27.00	8.50	4.50	5.00	
sq	Aqueous / settled sample.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
dis.filt	Dissolved / filtered sample.		15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022	15/11/2022	
tot.unfilt	Total / unfiltered sample.		13:15	14:20	15:30	16:30	10:30	12:00	
*	Subcontracted - refer to subcontractor report for accreditation status.		17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	17/11/2022	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221118-116	221118-116	221118-116	221118-116	221118-116	221118-116	
(F)	Trigger breach confirmed		27184077	27184090	27184104	27184119	27184137	27184153	
1-4*§	Sample deviation (see appendix)		EW1	EW1	EW1	EW1	EW1	EW1	
			Lab Sample No.(s)	AGS Reference					
Component	LOD/Units	Method							
Sum of detected Xylenes	<2 µg/l	TM208		<2		<2			
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5	<5	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221118-116
Client Ref.: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27184077	27184090	27184104	27184119	27184137	27184153
AGS Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH02
Depth	EW1	EW1	EW1	EW1	EW1	EW1
Type	19.00	28.00	27.00	8.50	4.50	5.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Ammonium Low	25-Nov-2022	22-Nov-2022	22-Nov-2022	28-Nov-2022	25-Nov-2022	25-Nov-2022
Anions by Kone (w)	19-Nov-2022	19-Nov-2022	19-Nov-2022	24-Nov-2022	19-Nov-2022	19-Nov-2022
Chromium III	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Dissolved Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022
EPH (DRO) (C10-C40) Aqueous (W)	25-Nov-2022	26-Nov-2022	25-Nov-2022	26-Nov-2022	25-Nov-2022	25-Nov-2022
EPH CWG (Aliphatic) Aqueous GC (W)		28-Nov-2022		28-Nov-2022		
EPH CWG (Aromatic) Aqueous GC (W)		28-Nov-2022		28-Nov-2022		
GRO by GC-FID (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Low Level Cyanide (W)	22-Nov-2022	22-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	22-Nov-2022
Low Level Hexavalent Chromium (w)	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022	21-Nov-2022
Low Level Phenols by HPLC (W)	28-Nov-2022	29-Nov-2022	29-Nov-2022	29-Nov-2022	28-Nov-2022	24-Nov-2022
Mercury Dissolved	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
Nitrite by Kone (w)	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022
PAH Spec MS - Aqueous (W)	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022	25-Nov-2022
pH Value	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022
SVOC MS (W) - Aqueous			24-Nov-2022			
Total EPH (aq)	25-Nov-2022	26-Nov-2022	25-Nov-2022	26-Nov-2022	25-Nov-2022	25-Nov-2022
Total Metals by ICP-MS	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022	24-Nov-2022
Total Organic and Inorganic Carbon	20-Nov-2022	20-Nov-2022	20-Nov-2022	19-Nov-2022	19-Nov-2022	19-Nov-2022
TPH CWG (W)		28-Nov-2022		28-Nov-2022		
VOC MS (W)	23-Nov-2022	23-Nov-2022	23-Nov-2022	23-Nov-2022	24-Nov-2022	23-Nov-2022



CERTIFICATE OF ANALYSIS

SDG: 221118-116
Client Ref: F212561

Report Number: 670167
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221203-29
Your Reference:	F212561
Location:	Keadby 3
Report No:	672253
Order Number:	386/121917/CP

We received 12 samples on Friday December 02, 2022 and 10 of these samples were scheduled for analysis which was completed on Thursday December 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

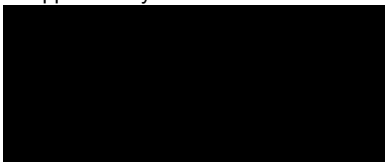
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27256755	BH101	EW3	19.00	30/11/2022
27256806	BH102	EW3	28.00	30/11/2022
27256819	BH103	EW3	26.00	30/11/2022
27256832	BH104	EW3	8.00	30/11/2022
27256845	DS111	EW3	4.00	30/11/2022
27256858	DUP-BH02	EW3	5.00	30/11/2022
27256871	DUP-BH03	EW3	5.00	30/11/2022
27256884	SWD102	EW3	0.00 - 0.00	30/11/2022
27256897	SWD104	EW3	0.00 - 0.00	30/11/2022
27256768	SWD105	EW3	0.00 - 0.00	30/11/2022
27256781	SWD106	EW3	0.00 - 0.00	30/11/2022
27256794	SWD107	EW3	0.00 - 0.00	30/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type								
				500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)									
27256755	BH101	EW3	19.00																					
27256806	BH102	EW3	28.00																					
27256819	BH103	EW3	26.00																					

Parameter	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	Sample Type
Ammonium Low	All																								GW
Anions by Kone (w)	All																								GW
Chromium III	All																								GW
Dissolved Metals by ICP-MS	All																								GW
EPH (DRO) (C10-C40) Aqueous (W)	All																								GW
GRO by GC-FID (W)	All																								GW
Low Level Cyanide (W)	All																								GW
Low Level Hexavalent Chromium (w)	All																								GW
Low Level Phenols by HPLC (W)	All																								GW
Mercury Dissolved	All																								GW
Nitrite by Kone (w)	All																								GW
PAH Spec MS - Aqueous (W)	All																								GW
pH Value	All																								GW
Total EPH (aq)	All																								GW
Total Metals by ICP-MS	All																								GW

27256845	DS111	EW3	4.00	Vial (ALE297)	GW																																								
				NaOH (ALE245)	GW																																								
27256832	BH104	EW3	8.00	HNO3 Unfiltered (ALE204)	GW																																								
				HNO3 Filtered (ALE204)	GW																																								
				H2SO4 (ALE244)	GW																																								
				500ml Plastic (ALE208)	GW																																								
				250ml Amber Gl. PTFE/PE (ALE219)	GW																																								
				0.5l glass bottle (ALE227)	GW																																								
				Vial (ALE297)	GW																																								
				NaOH (ALE245)	GW																																								
				HNO3 Unfiltered (ALE204)	GW																																								
				HNO3 Filtered (ALE204)	GW																																								
H2SO4 (ALE244)	GW																																												
500ml Plastic (ALE208)	GW																																												
250ml Amber Gl. PTFE/PE (ALE219)	GW																																												
0.5l glass bottle (ALE227)	GW																																												
Vial (ALE297)	GW																																												
NaOH (ALE245)	GW																																												
HNO3 Unfiltered (ALE204)	GW																																												
HNO3 Filtered (ALE204)	GW																																												
H2SO4 (ALE244)	GW																																												



CERTIFICATE OF ANALYSIS

SDG: 221203-29

Report Number: 672253

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container											Sample Type						
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)		500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)			
	27256755	BH101	EW3	19.00																		
	27256806	BH102	EW3	28.00																		
	27256819	BH103	EW3	26.00																		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 10						X								X						
VOC MS (W)	All	NDPs: 0 Tests: 10												X						X		

27256845	DS111	EW3	4.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
27256832	BH104	EW3	8.00	HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
27256819	BH103	EW3	26.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container											Sample Type								
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO ₃ Unfiltered (ALE204)	HNO ₃ Filtered (ALE204)	H ₂ SO ₄ (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)									
<p>X Test</p> <p>N No Determination Possible</p> <p>Sample Types -</p> <p>S - Soil/Solid</p> <p>UNS - Unspecified Solid</p> <p>GW - Ground Water</p> <p>SW - Surface Water</p> <p>LE - Land Leachate</p> <p>PL - Prepared Leachate</p> <p>PR - Process Water</p> <p>SA - Saline Water</p> <p>TE - Trade Effluent</p> <p>TS - Treated Sewage</p> <p>US - Untreated Sewage</p> <p>RE - Recreational Water</p> <p>DW - Drinking Water Non-regulatory</p> <p>UNL - Unspecified Liquid</p> <p>SL - Sludge</p> <p>G - Gas</p> <p>OTH - Other</p>	27256768	SWD105	EW3	0.00 - 0.00	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	
	27256894	SWD102	EW3	0.00 - 0.00	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
	27256897	SWD104	EW3	0.00 - 0.00	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Ammonium Low	All	NDPs: 0 Tests: 10																						
Anions by Kone (w)	All	NDPs: 0 Tests: 10																						
Chromium III	All	NDPs: 0 Tests: 10																						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10																						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 10																						
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10																						
Low Level Cyanide (W)	All	NDPs: 0 Tests: 10																						
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 10																						
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 10																						
Mercury Dissolved	All	NDPs: 0 Tests: 10																						
Nitrite by Kone (w)	All	NDPs: 0 Tests: 10																						
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 10																						
pH Value	All	NDPs: 0 Tests: 10																						
Total EPH (aq)	All	NDPs: 0 Tests: 10																						
Total Metals by ICP-MS	All	NDPs: 0 Tests: 10																						



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29

Report Number: 672253

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type												
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)		250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)										
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27256768	SWD105	EW3	0.00 - 0.00																								SW	
	27256894	SWD102	EW3	0.00 - 0.00																									SW
	27256897	SWD104	EW3	0.00 - 0.00																									SW
	27256894	SWD102	EW3	0.00 - 0.00																									SW
Total Organic and Inorganic Carbon	All																												NDPs: 0 Tests: 10
VOC MS (W)	All																												NDPs: 0 Tests: 10

27256794	SWD107	EW3	0.00 - 0.00	Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW	X		
				500ml Plastic (ALE208)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				0.5l glass bottle (ALE227)	SW			
				Vial (ALE297)	SW		X	
				NaOH (ALE245)	SW			
27256781	SWD106	EW3	0.00 - 0.00	HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW	X		
				500ml Plastic (ALE208)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				0.5l glass bottle (ALE227)	SW			
				Vial (ALE297)	SW		X	
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
27256768	SWD105	EW3	0.00 - 0.00	Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				H2SO4 (ALE244)	SW	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	SWD102
# ISO17025 accredited.	M mCERTS accredited.		F-9KAJYB-8PZ1	F-4BCJYB-39ZM	F-4SDJYB-ER4V	F-SW7JYB-7CAG	F-QC5JYB-4CT4	F-ZWZJYB-AS4F
aq Aqueous / settled sample.	diss.filt Dissolved / filtered sample.	tot.unfilt Total / unfiltered sample.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
* Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)		Depth (m)	19.00	28.00	26.00	8.00	4.00	0.00 - 0.00
		Sample Type	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022
		Date Sampled	14:30	15:20	16:20	13:30	12:30	10:30
		Sample Time	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022
		Date Received	221203-29	221203-29	221203-29	221203-29	221203-29	221203-29
		SDG Ref	27256755	27256806	27256819	27256832	27256845	27256884
		Lab Sample No.(s)	EW3	EW3	EW3	EW3	EW3	EW3
		AGS Reference						
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	5.09 #	65.5 #	93.6 #	5.38 #	3.02 #	9.31 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.79 #	2.8 #	1.88 #	<0.01 #	0.248 #	<0.01 #
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.3 #	3.6 #	2.42 #	<0.01 #	0.319 #	<0.01 #
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003 #	<0.003 #	<0.003 #	<0.003 #	0.0136 #	<0.003 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	34.4 #	24.3 #	13.3 #	82.5 #	36.5 #	1.03 #
Boron (diss.filt)	<10 µg/l	TM152	21600 #	19200 #	26500 #	7250 #	1490 #	472 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	1.02 #	1.84 #	1.22 #	0.304 #	0.122 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	1.74 #	13.6 #	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #	<0.3 #	1.67 #	1.02 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	0.223 #	<0.2 #	<0.2 #
Nickel (diss.filt)	<0.4 µg/l	TM152	3.27 #	4.13 #	4.76 #	1.88 #	1.04 #	2.3 #
Selenium (diss.filt)	<1 µg/l	TM152	444 #	<1 #	<1 #	69.8 #	79.7 #	2.83 #
Zinc (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	7.46 #	<1 #	1.43 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	421 #	534 #	654 #	105 #	148 #	226 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019 #	0.116 #	2.77 #	0.0406 #	<0.019 #	0.213 #
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1280 #	2210 #	2360 #	750 #	463 #	723 #
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	879 #	151 #	236 #	1130 #	152 #	<100 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	879 #	151 #	236 #	1130 #	152 #	<100 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184	2.49 #	<0.05 #	<0.05 #	0.488 #	0.973 #	<0.05 #
Sulphate	<2 mg/l	TM184	1080 #	1480 #	2130 #	327 #	361 #	441 #
Nitrate as NO3	<0.3 mg/l	TM184	7.61 #	<0.3 #	<0.3 #	<0.3 #	1.05 #	2.47 #
Phenol (low level)	<0.5 µg/l	TM255	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
Cresols (low level)	<0.5 µg/l	TM255	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
Xylenols (low level)	<0.5 µg/l	TM255	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
pH	<1 pH Units	TM256	9.25 #	8.66 #	7.97 #	9.27 #	11.2 #	7.79 #
Cyanide, Total (low level)	<5 µg/l	TM279	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003 #	<0.003 #	<0.015 #	<0.003 #	<0.003 #	<0.003 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	SWD104	SWD105	SWD106	SWD107		
# ISO17025 accredited.	M mCERTS accredited.		F-Q7YYIB-LAMM	F-3AXIYB-TYJ6	F-9GWYIB-ORCI	F-V03JYB-PSSY		
aq Aqueous / settled sample.	diss.filt Dissolved / filtered sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample.	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	(F) Trigger breach confirmed	Date Sampled	30/11/2022	30/11/2022	30/11/2022	30/11/2022		
1-4*@\$ Sample deviation (see appendix)		Date Received	10:00	09:45	09:20	11:30		
		Sample Time	02/12/2022	02/12/2022	02/12/2022	02/12/2022		
		Date Received	221203-29	221203-29	221203-29	221203-29		
		SDG Ref	27256897	27256768	27256781	27256794		
		Lab Sample No.(s)	EW3	EW3	EW3	EW3		
		AGS Reference						
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	12.9 #	12.4 #	13.1 #	11.9 #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.235 #	0.474 #	0.387 #	1.34 #		
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	0.302 #	0.609 #	0.498 #	1.72 #		
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003		
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.2 #	1.34 #	1.9 #	1.62 #		
Boron (diss.filt)	<10 µg/l	TM152	349 #	392 #	437 #	658 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152	1.2 #	1.49 #	0.97 #	0.648 #		
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #		
Nickel (diss.filt)	<0.4 µg/l	TM152	2.32 #	2.37 #	2.4 #	1.31 #		
Selenium (diss.filt)	<1 µg/l	TM152	1.21 #	1.42 #	1.27 #	1.39 #		
Zinc (diss.filt)	<1 µg/l	TM152	3.42 #	3.25 #	3.49 #	<1 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	172 #	175 #	177 #	190 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.43 #	1.28 #	1.43 #	1.74 #		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	548	615	615	636		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100 #	<100 #	<100 #	<100 #		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100	<100	<100		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01		
Nitrite as NO2	<0.05 mg/l	TM184	0.184 #	0.179 #	0.172 #	0.13 #		
Sulphate	<2 mg/l	TM184	313 #	324 #	325 #	375 #		
Nitrate as NO3	<0.3 mg/l	TM184	8.03 #	8.79 #	7.99 #	15.9 #		
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
pH	<1 pH Units	TM256	7.96 #	7.64 #	7.7 #	7.71 #		
Cyanide, Total (low level)	<5 µg/l	TM279	<5 #	<5 #	<5 #	<5 #		
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 #	<2.5 #	<2.5 #	<2.5 #		
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003 #	<0.003 #	<0.003 #	<0.003 #		



CERTIFICATE OF ANALYSIS

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	SWD102
#	ISO17025 accredited.		F-9KAJYB-8PZ1	F-4BCJYB-39ZM	F-4SDJYB-ER4V	F-SW7JYB-7CAG	F-QC5JYB-4CT4	F-ZWZJYB-AS4F
M	mCERTS accredited.		19.00	28.00	26.00	8.00	4.00	0.00 - 0.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
diss.filt	Dissolved / filtered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
tot.unfilt	Total / unfiltered sample.	Date Sampled	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14:30	15:20	16:20	13:30	12:30	10:30
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022
	(F) Trigger breach confirmed	SDG Ref	221203-29	221203-29	221203-29	221203-29	221203-29	221203-29
	1-4*\$@ Sample deviation (see appendix)	Lab Sample No.(s)	27256755	27256806	27256819	27256832	27256845	27256884
		AGS Reference	EW3	EW3	EW3	EW3	EW3	EW3
Component	LOD/Units	Method						
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100	<100	<100



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	SWD104	SWD105	SWD106	SWD107		
#	ISO17025 accredited.		F-Q7YYIB-LAMM	F-3AXIYB-TYJ6	F-9GWIYB-ORCI	F-V03JYB-PSSY		
M	mCERTS accredited.	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
aq	Aqueous / settled sample.	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
diss.filt	Dissolved / filtered sample.	30/11/2022	30/11/2022	30/11/2022	30/11/2022			
tot.unfilt	Total / unfiltered sample.	10:00	09:45	09:20	11:30			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Type	Date Sampled	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference	
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	02/12/2022	02/12/2022	02/12/2022	02/12/2022			
	(F) Trigger breach confirmed	221203-29	221203-29	221203-29	221203-29			
	1-4*# Sample deviation (see appendix)	27256897	27256768	27256781	27256794			
		EW3	EW3	EW3	EW3			
Component	LOD/Units	Method	<10	<10	<10	<10		
GRO >C5-C10	<10 µg/l	TM245						
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	SWD102
# ISO17025 accredited.	M mCERTS accredited.		F-9KAJYB-8PZ1	F-4BCJYB-39ZM	F-4SDJYB-ER4V	F-SW7JYB-7CAG	F-QC5JYB-4CT4	F-ZWZJYB-AS4F
aq Aqueous / settled sample.	aq Aqueous / filtered sample.	19.00	28.00	26.00	8.00	4.00	0.00 - 0.00	
tot.unfilt Total / unfiltered sample.	tot.unfilt Dissolved / filtered sample.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	
* Subcontracted - refer to subcontractor report for accreditation status.		30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		14:30	15:20	16:20	13:30	12:30	10:30	
(F) Trigger breach confirmed		02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022	
1-4* @ Sample deviation (see appendix)		221203-29	221203-29	221203-29	221203-29	221203-29	221203-29	
		27256755	27256806	27256819	27256832	27256845	27256884	
		EW3	EW3	EW3	EW3	EW3	EW3	
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	0.0683	<0.01	0.0114	0.0705	0.0265	<0.01
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Acenaphthene (aq)	<0.005 µg/l	TM178	0.0053	<0.005	<0.005	0.0122	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	0.0097	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Fluoranthene (aq)	<0.005 µg/l	TM178	0.1	0.0089	0.0162	0.552	0.108	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	0.0374	0.0073	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0388	<0.005	0.007	0.145	0.0325	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	0.0084	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Chrysene (aq)	<0.005 µg/l	TM178	0.0519	<0.005	<0.005	0.309	0.0628	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Pyrene (aq)	<0.005 µg/l	TM178	0.101	0.008	0.0155	0.557	0.0984	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	0.0436	<0.005	<0.005	0.261	0.0539	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	0.0781	<0.005	<0.005	0.392	0.0756	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	0.0284	<0.005	<0.005	0.166	0.0303	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	0.0537	<0.002	<0.002	0.304	0.0572	<0.002
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	0.0327	0.0067	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	0.0433	<0.005	<0.005	0.209	0.0326	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	0.0347	<0.005	<0.005	0.176	0.0354	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	0.647	<0.082	<0.082	3.24	0.627	<0.082
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	SWD104	SWD105	SWD106	SWD107		
#	M		F-Q7YYIB-LAMM	F-3AXIYB-TYJ6	F-9GWYIB-ORCI	F-V03JYB-PSSY		
ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Subcontracted - refer to subcontractor report for accreditation status. % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. Trigger breach confirmed Sample deviation (see appendix)		Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
		Date Sampled	30/11/2022	30/11/2022	30/11/2022	30/11/2022		
		Sample Time	10:00	09:45	09:20	11:30		
		Date Received	02/12/2022	02/12/2022	02/12/2022	02/12/2022		
		SDG Ref	221203-29	221203-29	221203-29	221203-29		
		Lab Sample No.(s)	27256897	27256768	27256781	27256794		
		AGS Reference	EW3	EW3	EW3	EW3		
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	<0.01	<0.01	◆ #	◆ #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Fluoranthene (aq)	<0.005 µg/l	TM178	0.01	0.011	0.0082	<0.005	◆ #	◆ #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Pyrene (aq)	<0.005 µg/l	TM178	0.0104	0.0115	0.0086	<0.005	◆ #	◆ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	<0.002	<0.002	◆ #	◆ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	◆ #	◆ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	<0.082	<0.082	◆ #	◆ #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-29
Client Ref.: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	SWD102
#	ISO17025 accredited.		F-9KAJYB-8PZ1	F-4BCJYB-39ZM	F-4SDJYB-ER4V	F-SW7JYB-7CAG	F-QC5JYB-4CT4	F-ZWZYB-AS4F
M	mCERTS accredited.		19.00	28.00	26.00	8.00	4.00	0.00 - 0.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)
diss.filt	Dissolved / filtered sample.	Sample Type	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022	30/11/2022
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:30	15:20	16:20	13:30	12:30	10:30
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022	02/12/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-29	221203-29	221203-29	221203-29	221203-29	221203-29
	(F) Trigger breach confirmed	SDG Ref	27256755	27256806	27256819	27256832	27256845	27256884
	1-4*@\$ Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3	EW3	EW3	EW3	EW3
		AGS Reference						
Component	LOD/Units	Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5	<5



CERTIFICATE OF ANALYSIS

Validated

 SDG: 221203-29
 Client Ref.: F212561

 Report Number: 672253
 Location: Keadby 3

Superseded Report:

VOC MS (W)

<small>Results Legend</small> # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fltr Dissolved / filtered sample. tot.unfltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)		<small>Customer Sample Ref.</small> Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	<small>SWD104</small> F-Q7YYB-LAMM 0.00 - 0.00 Surface Water (SW) 30/11/2022 10:00 02/12/2022 221203-29 27256897 EW3	<small>SWD105</small> F-3AXIYB-TYJ6 0.00 - 0.00 Surface Water (SW) 30/11/2022 09:45 02/12/2022 221203-29 27256768 EW3	<small>SWD106</small> F-9GWIYB-ORC1 0.00 - 0.00 Surface Water (SW) 30/11/2022 09:20 02/12/2022 221203-29 27256781 EW3	<small>SWD107</small> F-V03JYB-PSSY 0.00 - 0.00 Surface Water (SW) 30/11/2022 11:30 02/12/2022 221203-29 27256794 EW3		
Component	LOD/Units	Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	#	#
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5		



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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 221203-29
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Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27256755	27256806	27256819	27256832	27256845	27256884	27256897	27256768	27256781	27256794
AGS Ref.	BH101	BH102	BH103	BH104	DS111	SWD102	SWD104	SWD105	SWD106	SWD107
Depth	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3
Type	19.00	28.00	26.00	8.00	4.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammonium Low	12-Dec-2022	08-Dec-2022	08-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	12-Dec-2022
Anions by Kone (w)	07-Dec-2022	09-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	09-Dec-2022	07-Dec-2022	07-Dec-2022
Chromium III	13-Dec-2022	12-Dec-2022	12-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	12-Dec-2022	13-Dec-2022	12-Dec-2022	13-Dec-2022
Dissolved Metals by ICP-MS	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022
EPH (DRO) (C10-C40) Aqueous (W)	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
GRO by GC-FID (W)	07-Dec-2022	07-Dec-2022	07-Dec-2022	09-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
Low Level Cyanide (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022
Low Level Hexavalent Chromium (w)	13-Dec-2022	05-Dec-2022	05-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	05-Dec-2022	13-Dec-2022	05-Dec-2022	13-Dec-2022
Low Level Phenols by HPLC (W)	06-Dec-2022	09-Dec-2022	09-Dec-2022	06-Dec-2022	08-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	09-Dec-2022	06-Dec-2022
Mercury Dissolved	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
Nitrite by Kone (w)	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
PAH Spec MS - Aqueous (W)	14-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	14-Dec-2022
pH Value	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	06-Dec-2022	05-Dec-2022	05-Dec-2022
Total EPH (aq)	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Total Metals by ICP-MS	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	09-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022
Total Organic and Inorganic Carbon	06-Dec-2022	07-Dec-2022	07-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022
VOC MS (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	07-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221203-29
Client Ref: F212561

Report Number: 672253
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221203-30
Your Reference:	F212561
Location:	Keadby 3
Report No:	672254
Order Number:	386/121917/CP

We received 8 samples on Thursday December 01, 2022 and 8 of these samples were scheduled for analysis which was completed on Thursday December 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

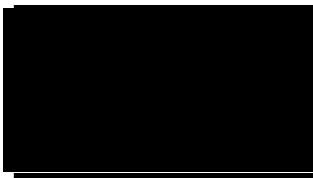
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27256910	MS-BH01	EW3	7.00	29/11/2022
27256923	MS-BH03	EW3	4.50	29/11/2022
27256936	MS-BH05	EW3	6.00	29/11/2022
27256949	MS-BH10	EW3	10.00	29/11/2022
27256962	MS-BH12	EW3	8.00	29/11/2022
27256975	MS-BH13	EW3	9.00	29/11/2022
27256988	MS-BH20	EW3	8.00	29/11/2022
27257001	MS-BH21	EW3	17.00	29/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div>X Test</div> <div>N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)		27256910		27256923		27256936	
	Customer Sample Reference		MS-BH01		MS-BH03		MS-BH05	
	AGS Reference		EW3		EW3		EW3	
	Depth (m)		7.00		4.50		6.00	
	Container		500ml Plastic (ALE208)		250ml Amber Gl. PTFE/PE (ALE219)		0.5l glass bottle (ALE227)	
			500ml Plastic (ALE208)		500ml Plastic (ALE208)		H2SO4 (ALE244)	
Sample Type		GW		GW		GW		
Ammonium Low	All	NDPs: 0 Tests: 8			X			
Anions by Kone (w)	All	NDPs: 0 Tests: 8		X			X	
Chromium III	All	NDPs: 0 Tests: 8				X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8	X				X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8				X		
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8					X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8		X			X	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8		X		X		
Mercury Dissolved	All	NDPs: 0 Tests: 8			X			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8					X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8	X			X	X	
pH Value	All	NDPs: 0 Tests: 8		X		X	X	
Total EPH (aq)	All	NDPs: 0 Tests: 8	X			X		
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8			X		X	
							X	
				X		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type					
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)		500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27256910	MS-BH01	EW3	7.00														
	27256923	MS-BH03	EW3	4.50														
	27256936	MS-BH05	EW3	6.00														
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8										X						
VOC MS (W)	All	NDPs: 0 Tests: 8																X

27256962	MS-BH12	EW3	8.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
27256949	MS-BH10	EW3	10.00	HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
27256936	MS-BH05	EW3	6.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				H2SO4 (ALE244)	GW	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type	
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)		
	27256975	MS-BH13	EW3	9.00										
	27256988	MS-BH20	EW3	8.00										
	27257001	MS-BH21	EW3	17.00										
Ammonium Low	All	NDPs: 0 Tests: 8					X					X		
Anions by Kone (w)	All	NDPs: 0 Tests: 8				X					X			X
Chromium III	All	NDPs: 0 Tests: 8					X					X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8					X					X		
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8			X						X			X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8							X				X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8							X				X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8				X						X		X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8					X					X		
Mercury Dissolved	All	NDPs: 0 Tests: 8					X					X		
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8							X				X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8			X						X			X
pH Value	All	NDPs: 0 Tests: 8				X						X		X
Total EPH (aq)	All	NDPs: 0 Tests: 8			X						X			X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8							X				X	



CERTIFICATE OF ANALYSIS

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend Test No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																		
	27257001	MS-BH21	EW3	17.00	500ml Plastic (ALE208)	GW																		
	27256975	MS-BH13	EW3	9.00	250ml Amber Gl. PTFE/PE (ALE219)	GW																		
	27256988	MS-BH20	EW3	8.00	0.5l glass bottle (ALE227)	GW																		
					NaOH (ALE245)	GW																		
					HNO3 Unfiltered (ALE204)	GW																		
				HNO3 Filtered (ALE204)	GW																			
				H2SO4 (ALE244)	GW																			
				500ml Plastic (ALE208)	GW																			
				250ml Amber Gl. PTFE/PE (ALE219)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW																			
				HNO3 Unfiltered (ALE204)	GW																			
				HNO3 Filtered (ALE204)	GW																			
				H2SO4 (ALE244)	GW																			
				500ml Plastic (ALE208)	GW																			
				250ml Amber Gl. PTFE/PE (ALE219)	GW																			
				0.5l glass bottle (ALE227)	GW																			
				Vial (ALE297)	GW																			
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8					X																	
VOC MS (W)	All	NDPs: 0 Tests: 8											X											

27257001	MS-BH21	EW3	17.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH01 F-RR8HYB-GGRF 7.00 Ground Water (GW) 29/11/2022 11:45 01/12/2022 221203-30 27256910 EW3	MS-BH03 F-4P7HYB-SLLZ 4.50 Ground Water (GW) 29/11/2022 10:50 01/12/2022 221203-30 27256923 EW3	MS-BH05 F-PADHYB-C6NV 6.00 Ground Water (GW) 29/11/2022 13:30 01/12/2022 221203-30 27256936 EW3	MS-BH10 F-NIEHYB-CU8M 10.00 Ground Water (GW) 29/11/2022 14:20 01/12/2022 221203-30 27256949 EW3	MS-BH12 F-J6IHYB-ZZMQ 8.00 Ground Water (GW) 29/11/2022 16:10 01/12/2022 221203-30 27256962 EW3	MS-BH13 F-EYGHYB-VU9T 9.00 Ground Water (GW) 29/11/2022 15:15 01/12/2022 221203-30 27256975 EW3
# ISO17025 accredited.	M mCERTS accredited.							
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	19.3 @ #	14.8 @ #	12.4 @ #	12.2 @ #	11.4 @ #	12.8 @ #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.91 #	2.12 #	2.58 #	1.5 #	1.36 #	1.29 #
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.46 #	2.72 #	3.32 #	1.93 #	1.75 #	1.66 #
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	0.00535	<0.003	<0.003
Arsenic (diss.filt)	<0.5 µg/l	TM152	53.9 #	77.5 #	227 #	27.5 #	44.3 #	81.6 #
Boron (diss.filt)	<10 µg/l	TM152	61.7 #	48.8 #	59.1 #	82.3 #	188 #	84.2 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	0.201 #	<0.08 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	5.35 #	<1 #	2.01 #
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	0.22 #	<0.2 #	<0.2 #	<0.2 #
Nickel (diss.filt)	<0.4 µg/l	TM152	3.19 #	4.07 #	4.14 #	1.75 #	1.01 #	1.43 #
Selenium (diss.filt)	<1 µg/l	TM152	2.71 #	<1 #	<1 #	<1 #	<1 #	<1 #
Zinc (diss.filt)	<1 µg/l	TM152	4.66 #	3.09 #	3.8 #	2.86 #	4.96 #	1.25 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	232 #	250 #	256 #	200 #	433 #	246 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	6.06 #	18 #	55.1 #	2.73 #	32 #	8.01 #
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1650	1100	907	692	1580	879
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	184 #	<100 #	<100 #	<100 #	190 #	120 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	184	<100	<100	<100	190	120
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184	757 #	619 #	661 #	738 #	1150 #	1020 #
Nitrate as NO3	<0.3 mg/l	TM184	0.312 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH	<1 pH Units	TM256	7.21 #	7.41 #	6.53 #	7.8 #	7.28 #	7.78 #
Cyanide, Total (low level)	<5 µg/l	TM279	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH21			
#	ISO17025 accredited.		F-2K5HYB-GOBX	F-D3CHYB-R2GV			
M	mCERTS accredited.		8.00	17.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	29/11/2022	29/11/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:00	12:40			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/12/2022	01/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-30	221203-30			
	(F) Trigger breach confirmed	SDG Ref	27256988	27257001			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	12	12.6	@ #	@ #	
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.39	1.63	#	#	
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	3.07	2.09	#	#	
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	2.44	13.7	#	#	
Boron (diss.filt)	<10 µg/l	TM152	157	109	#	#	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	#	#	
Chromium (diss.filt)	<1 µg/l	TM152	<1	1.3	#	#	
Copper (diss.filt)	<0.3 µg/l	TM152	0.525	<0.3	#	#	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	5.56	2.62	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	1.04	<1	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	5.44	11	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	307	299	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	10.4	#	#	
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1070	939			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	2100	<100	#	#	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	2100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	#	#	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	#	#	
Sulphate	<2 mg/l	TM184	1060	671	#	#	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	#	#	
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Cresols (low level)	<0.5 µg/l	TM255	1.79	0.81			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	1.79	0.81			
pH	<1 pH Units	TM256	7.56	7.44	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH03	MS-BH05	MS-BH10	MS-BH12	MS-BH13
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-RR8HYB-GGRF	F-4P7HYB-SLLZ	F-PADHYB-C6NV	F-NIEHYB-CU8M	F-J6IHYB-ZZMQ	F-EYGHYB-VU9T
M	mCERTS accredited.		7.00	4.50	6.00	10.00	8.00	9.00
aq	Aqueous / settled sample.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.		29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022
tot.unfilt	Total / unfiltered sample.		11:45	10:50	13:30	14:20	16:10	15:15
*	Subcontracted - refer to subcontractor report for accreditation status.		01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	221203-30	221203-30	221203-30	221203-30	221203-30	221203-30	
(F)	Trigger breach confirmed	27256910	27256923	27256936	27256949	27256962	27256975	
1-4*§@	Sample deviation (see appendix)	EW3	EW3	EW3	EW3	EW3	EW3	
Component	LOD/Units	Method						
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10	<10	<10
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100	<100	<100



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30

Report Number: 672254

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.		MS-BH20	MS-BH21			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERES accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.							
(F)	Trigger breach confirmed							
1-4*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
GRO >C5-C10	<10 µg/l	TM245	<10	<10				
EPH (C6-C10)	<100 µg/l	TM245	<100	<100				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH03	MS-BH05	MS-BH10	MS-BH12	MS-BH13
#	ISO17025 accredited.		F-RR8HYB-GGRF	F-4P7HYB-SLLZ	F-PADHYB-C6NV	F-NIEHYB-CU8M	F-J6IHBYB-ZZMQ	F-EYGHYB-VU9T
M	mCERTS accredited.		7.00	4.50	6.00	10.00	8.00	9.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Sample Type	29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:45	10:50	13:30	14:20	16:10	15:15
	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022
	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-30	221203-30	221203-30	221203-30	221203-30	221203-30
	(F) Trigger breach confirmed	SDG Ref	27256910	27256923	27256936	27256949	27256962	27256975
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3	EW3	EW3	EW3	EW3
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	0.0114 #	<0.01 #	0.0142 #	<0.01 @ #	0.037 @ #	0.0542 @ #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 #	0.0137 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Fluoranthene (aq)	<0.005 µg/l	TM178	0.00986 #	<0.005 #	<0.005 #	<0.005 @ #	0.0091 @ #	0.0122 @ #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0103 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Pyrene (aq)	<0.005 µg/l	TM178	0.0156 #	<0.005 #	<0.005 #	<0.005 @ #	0.0093 @ #	0.0113 @ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 #	<0.002 #	<0.002 #	<0.002 @ #	<0.002 @ #	<0.002 @ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 @ #	<0.005 @ #	<0.005 @ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 #	<0.082 #	<0.082 #	<0.082 @ #	<0.082 @ #	<0.082 @ #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
Client Ref.: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH21				
#	ISO17025 accredited.		F-2XSHYB-GOBX	F-D3CHYB-R2GV				
M	mCERTS accredited.		8.00	17.00				
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)				
diss.filt	Dissolved / filtered sample.	Sample Type	29/11/2022	29/11/2022				
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:00	12:40				
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	01/12/2022	01/12/2022				
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-30	221203-30				
	(F) Trigger breach confirmed	SDG Ref	27256988	27257001				
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3				
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	@ #	#		
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	@ #	#		
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	@ #	#		
Fluoranthene (aq)	<0.005 µg/l	TM178	0.0302	<0.005	@ #	#		
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	@ #	#		
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0218	<0.005	@ #	#		
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	@ #	#		
Chrysene (aq)	<0.005 µg/l	TM178	0.0234	<0.005	@ #	#		
Pyrene (aq)	<0.005 µg/l	TM178	0.0517	<0.005	@ #	#		
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	0.0117	<0.005	@ #	#		
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	0.0438	<0.005	@ #	#		
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	0.0161	<0.005	@ #	#		
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	0.0311	<0.002	@ #	#		
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	@ #	#		
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	0.0319	<0.005	@ #	#		
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	0.0245	<0.005	@ #	#		
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	0.286	<0.082	@ #	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-30
 Client Ref.: F212561

Report Number: 672254
 Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH03	MS-BH05	MS-BH10	MS-BH12	MS-BH13	
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-RR8HYB-GGRF	F-4P7HYB-SLLZ	F-PADHYB-C6NV	F-NIEHYB-CU8M	F-J6IHYB-ZZMQ	F-EYGHYB-VU9T	
M mCERTS accredited.			7.00	4.50	6.00	10.00	8.00	9.00	
aq Aqueous / settled sample.			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
diss.filt Dissolved / filtered sample.			29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022	29/11/2022	
tot.unfilt Total / unfiltered sample.			11:45	10:50	13:30	14:20	16:10	15:15	
* Subcontracted - refer to subcontractor report for accreditation status.			01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			221203-30	221203-30	221203-30	221203-30	221203-30	221203-30	
(F) Trigger breach confirmed			27256910	27256923	27256936	27256949	27256962	27256975	
1-4* Sample deviation (see appendix)			EW3	EW3	EW3	EW3	EW3	EW3	
Component	LOD/Units		Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l		TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Toluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5	<5	



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Validated

SDG: 221203-30
Client Ref.: F212561Report Number: 672254
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH21				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*% Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	MS-BH20	MS-BH21				
			F-2KSHYB-GOBX	F-D3CHYB-R2GV				
			8.00	17.00				
			Ground Water (GW)	Ground Water (GW)				
			29/11/2022	29/11/2022				
			10:00	12:40				
			01/12/2022	01/12/2022				
			221203-30	221203-30				
			27256988	27257001				
			EW3	EW3				
Component	LOD/Units	Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1				
			#	#				
Benzene	<1 µg/l	TM208	<1	<1				
			#	#				
Toluene	<1 µg/l	TM208	<1	<1				
			#	#				
Ethylbenzene	<1 µg/l	TM208	<1	<1				
			#	#				
m,p-Xylene	<1 µg/l	TM208	<1	<1				
			#	#				
o-Xylene	<1 µg/l	TM208	<1	<1				
			#	#				
Sum of BTEX	<5 µg/l	TM208	<5	<5				



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Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 221203-30
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Superseded Report:

Test Completion Dates

Lab Sample No(s)	27256910	27256923	27256936	27256949	27256962	27256975	27256988	27257001
Customer Sample Ref.	MS-BH01	MS-BH03	MS-BH05	MS-BH10	MS-BH12	MS-BH13	MS-BH20	MS-BH21
AGS Ref.	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3
Depth	7.00	4.50	6.00	10.00	8.00	9.00	8.00	17.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water

Ammonium Low	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022
Anions by Kone (w)	09-Dec-2022	09-Dec-2022	09-Dec-2022	07-Dec-2022	07-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022
Chromium III	13-Dec-2022	12-Dec-2022	13-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	13-Dec-2022	12-Dec-2022
Dissolved Metals by ICP-MS	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022
EPH (DRO) (C10-C40) Aqueous (W)	12-Dec-2022	12-Dec-2022	12-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	12-Dec-2022
GRO by GC-FID (W)	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	09-Dec-2022	07-Dec-2022	09-Dec-2022
Low Level Cyanide (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022
Low Level Hexavalent Chromium (w)	13-Dec-2022	05-Dec-2022	13-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	13-Dec-2022	05-Dec-2022
Low Level Phenols by HPLC (W)	06-Dec-2022	09-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022
Mercury Dissolved	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
Nitrite by Kone (w)	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
PAH Spec MS - Aqueous (W)	13-Dec-2022	13-Dec-2022	13-Dec-2022	14-Dec-2022	15-Dec-2022	15-Dec-2022	14-Dec-2022	13-Dec-2022
pH Value	08-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022	08-Dec-2022	05-Dec-2022
Total EPH (aq)	12-Dec-2022	12-Dec-2022	12-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	12-Dec-2022
Total Metals by ICP-MS	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	09-Dec-2022	14-Dec-2022	14-Dec-2022
Total Organic and Inorganic Carbon	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
VOC MS (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221203-30
Client Ref: F212561

Report Number: 672254
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221203-31
Your Reference:	F212561
Location:	Keadby 3
Report No:	672255
Order Number:	386/121917/CP

We received 4 samples on Wednesday November 30, 2022 and 4 of these samples were scheduled for analysis which was completed on Thursday December 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

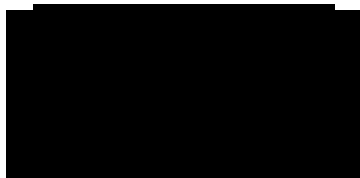
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27257014	DUP-BH01	EW3	5.00	28/11/2022
27257027	MS-BH02	EW3	9.00	28/11/2022
27257040	MS-BH09	EW3	9.00	28/11/2022
27257053	MS-BH19	EW3	5.00	28/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

27257053	MS-BH19	EW3	5.00	Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Unfiltered (ALE204)	GW
				HNO3 Filtered (ALE204)	GW
				H2SO4 (ALE244)	GW
				500ml Plastic (ALE208)	GW
				250ml Amber Gl. PTFE/PE (ALE219)	GW
				0.5l glass bottle (ALE227)	GW
27257040	MS-BH09	EW3	9.00	Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Unfiltered (ALE204)	GW
				HNO3 Filtered (ALE204)	GW
				H2SO4 (ALE244)	GW
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X
					X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	27257014		27257027		27257040	
	Customer Sample Reference	DUP-BH01		MS-BH02		MS-BH09	
AGS Reference	EW3		EW3		EW3		
Depth (m)	5.00		9.00		9.00		
Container	500ml Plastic (ALE208)						
	250ml Amber Gl. PTFE/PE (ALE219)						
Sample Type	0.5l glass bottle (ALE227)						
	GW						
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4		X		X	
VOC MS (W)	All	NDPs: 0 Tests: 4			X		X

27257053	MS-BH19	EW3	5.00	Vial (ALE297)	GW			X
				NaOH (ALE245)	GW			
				HNO3 Unfiltered (ALE204)	GW			
				HNO3 Filtered (ALE204)	GW			
				H2SO4 (ALE244)	GW	X		
				500ml Plastic (ALE208)	GW			
				250ml Amber Gl. PTFE/PE (ALE219)	GW			
				0.5l glass bottle (ALE227)	GW			
				Vial (ALE297)	GW			X
				NaOH (ALE245)	GW			
27257040	MS-BH09	EW3	9.00	HNO3 Unfiltered (ALE204)	GW			
				HNO3 Filtered (ALE204)	GW			
				H2SO4 (ALE244)	GW	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH09	MS-BH19		
# ISO17025 accredited.	M mCERTS accredited.		F-C01FYB-B5G8	F-JNMFYB-XXM6	F-ZQHFYB-NB6F	F-Q3KFYB-3DBH		
aq Aqueous / settled sample.	diss.filt Dissolved / filtered sample.	tot.unfilt Total / unfiltered sample.	5.00 Ground Water (GW)	9.00 Ground Water (GW)	9.00 Ground Water (GW)	5.00 Ground Water (GW)		
* Subcontracted - refer to subcontractor report for accreditation status.		Depth (m)	28/11/2022	28/11/2022	28/11/2022	28/11/2022		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Sample Type	14:00	16:00	13:30	15:00		
(F) Trigger breach confirmed		Date Sampled	30/11/2022	30/11/2022	30/11/2022	30/11/2022		
1-4* @ Sample deviation (see appendix)		Date Received	221203-31	221203-31	221203-31	221203-31		
		SDG Ref	27257014	27257027	27257040	27257053		
		Lab Sample No.(s)	EW3	EW3	EW3	EW3		
		AGS Reference						
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	12.7 @ #	24.2 @ #	12.8 @ #	10.4 @ #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	3.59 #	1.89 #	3.76 #	3.71 #		
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	4.62 #	2.43 #	4.83 #	4.76 #		
Chromium, Trivalent (Low)	<0.003 mg/l	TM152		<0.003	<0.003	<0.003		
Arsenic (diss.filt)	<0.5 µg/l	TM152	43.8 #	33.1 #	42.9 #	101 #		
Boron (diss.filt)	<10 µg/l	TM152	75.8 #	120 #	68.5 #	48.7 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	1.06 #	1.05 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #	<0.3 #		
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #		
Nickel (diss.filt)	<0.4 µg/l	TM152	15.7 #	9.18 #	15.5 #	5.8 #		
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	4.29 #	<1 #	<1 #		
Zinc (diss.filt)	<1 µg/l	TM152	6.69 #	7.19 #	6.29 #	3.02 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	228 #	119 #	226 #	211 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152	63 #	22 #	64.4 #	53 #		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	753	435	689	7120		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	145 #	<100 #	107 #	152 #		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	145	<100	107	152		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #		
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #	<0.05 #	<0.05 #	<0.05 #		
Sulphate	<2 mg/l	TM184	566 #	361 #	564 #	523 #		
Nitrate as NO3	<0.3 mg/l	TM184	<0.3 #	<0.3 #	<0.3 #	<0.3 #		
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5		
pH	<1 pH Units	TM256	6.98 #	7.3 #	6.92 #	6.96 #		
Cyanide, Total (low level)	<5 µg/l	TM279	<5 @ #	<5 #	<5 #	<5 #		
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 @ #	<2.5 #	<2.5 #	<2.5 #		
Low Level Hexavalent Chromium	<0.003 mg/l	TM331		<0.003 #	<0.003 #	<0.015 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31

Report Number: 672255

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH09	MS-BH19		
#	ISO17025 accredited.		F-C0IFYB-B5G8	F-JNMFYB-XXM6	F-ZQH FYB-NB6F	F-Q3KFYB-3DBH		
M	mCERTS accredited.		5.00	9.00	9.00	5.00		
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
dis.filt	Dissolved / filtered sample.	Sample Type	28/11/2022	28/11/2022	28/11/2022	28/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:00	16:00	13:30	15:00		
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	30/11/2022	30/11/2022	30/11/2022	30/11/2022		
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-31	221203-31	221203-31	221203-31		
	(F) Trigger breach confirmed	SDG Ref	27257014	27257027	27257040	27257053		
	1-4*% Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3	EW3	EW3		
		AGS Reference						
Component	LOD/Units	Method						
GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10		
EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH09	MS-BH19		
#	M		F-C01FYB-B5G8	F-JNMFYB-XXM6	F-ZQHFYB-NB6F	F-Q3KFYB-3DBH		
ISO17025 accredited.	mCERTS accredited.		5.00	9.00	9.00	5.00		
aq Aqueous / settled sample.		Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
diss.filter Dissolved / filtered sample.		Sample Type	28/11/2022	28/11/2022	28/11/2022	28/11/2022		
tot.unfilt Total / unfiltered sample.		Date Sampled	14:00	16:00	13:30	15:00		
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	30/11/2022	30/11/2022	30/11/2022	30/11/2022		
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221203-31	221203-31	221203-31	221203-31		
(F) Trigger breach confirmed		SDG Ref	27257014	27257027	27257040	27257053		
1-4* @ Sample deviation (see appendix)		Lab Sample No.(s)	EW3	EW3	EW3	EW3		
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	0.0296 @ #	0.0537 @ #	0.0317 @ #	0.028 @ #		
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Fluoranthene (aq)	<0.005 µg/l	TM178	0.0063 @ #	<0.005 @ #	0.0089 @ #	0.0294 @ #		
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 @ #	0.0108 @ #	<0.005 @ #	0.0243 @ #		
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 @ #	0.0066 @ #	<0.005 @ #	<0.01 @ #		
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Pyrene (aq)	<0.005 µg/l	TM178	0.006 @ #	<0.005 @ #	0.0072 @ #	0.0355 @ #		
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 @ #	<0.002 @ #	<0.002 @ #	<0.004 @ #		
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 @ #	<0.005 @ #	<0.005 @ #	<0.01 @ #		
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 @ #	<0.082 @ #	<0.082 @ #	<0.164 @ #		



CERTIFICATE OF ANALYSIS

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.		DUP-BH01	MS-BH02	MS-BH09	MS-BH19		
#	ISO17025 accredited.			F-C0IFYB-B5G8	F-JNMFYB-XXM6	F-ZQHFYB-NB6F	F-Q3KFYB-3DBH		
M	mCERTS accredited.	Depth (m)		5.00	9.00	9.00	5.00		
aq	Aqueous / settled sample.	Sample Type		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
diss.filt	Dissolved / filtered sample.	Date Sampled		28/11/2022	28/11/2022	28/11/2022	28/11/2022		
tot.unfilt	Total / unfiltered sample.	Date Received		14:00	16:00	13:30	15:00		
*	Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref		221203-31	221203-31	221203-31	221203-31		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Lab Sample No.(s)		27257014	27257027	27257040	27257053		
(F)	Trigger breach confirmed	AGS Reference		EW3	EW3	EW3	EW3		
1-4*\$@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	#	<1	#	<1	#	
Benzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	
Toluene	<1 µg/l	TM208	<1	#	<1	#	<1	#	
Ethylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#	
m,p-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#	
o-Xylene	<1 µg/l	TM208	<1	#	<1	#	<1	#	
Sum of BTEX	<5 µg/l	TM208	<5		<5		<5		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Notification of NDPs (No determination possible)

Date Received : 03/12/2022 06:04:26

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
27257014	DUP-BH01 EW3	5.00	Low Level Hexavalent Chromium (w)	Sample unsuitable for analysis
27257014	DUP-BH01 EW3	5.00	Chromium III	Sample unsuitable for analysis



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-31
Client Ref.: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27257014	27257027	27257040	27257053
Customer Sample Ref.	DUP-BH01	MS-BH02	MS-BH09	MS-BH19
AGS Ref.	EW3	EW3	EW3	EW3
Depth	5.00	9.00	9.00	5.00
Type	Ground Water	Ground Water	Ground Water	Ground Water

Ammonium Low	12-Dec-2022	12-Dec-2022	08-Dec-2022	12-Dec-2022
Anions by Kone (w)	09-Dec-2022	09-Dec-2022	07-Dec-2022	07-Dec-2022
Chromium III		12-Dec-2022	13-Dec-2022	13-Dec-2022
Dissolved Metals by ICP-MS	12-Dec-2022	12-Dec-2022	12-Dec-2022	13-Dec-2022
EPH (DRO) (C10-C40) Aqueous (W)	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
GRO by GC-FID (W)	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
Low Level Cyanide (W)	08-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022
Low Level Hexavalent Chromium (w)		05-Dec-2022	13-Dec-2022	05-Dec-2022
Low Level Phenols by HPLC (W)	08-Dec-2022	08-Dec-2022	09-Dec-2022	08-Dec-2022
Mercury Dissolved	07-Dec-2022	07-Dec-2022	07-Dec-2022	09-Dec-2022
Nitrite by Kone (w)	08-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
PAH Spec MS - Aqueous (W)	15-Dec-2022	14-Dec-2022	15-Dec-2022	15-Dec-2022
pH Value	05-Dec-2022	05-Dec-2022	05-Dec-2022	05-Dec-2022
Total EPH (aq)	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Total Metals by ICP-MS	14-Dec-2022	14-Dec-2022	09-Dec-2022	14-Dec-2022
Total Organic and Inorganic Carbon	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
VOC MS (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221203-31
Client Ref: F212561

Report Number: 672255
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	15 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221203-33
Your Reference:	F212561
Location:	Keadby 3
Report No:	672263
Order Number:	386/121917/CP

We received 10 samples on Saturday December 03, 2022 and 8 of these samples were scheduled for analysis which was completed on Thursday December 15, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

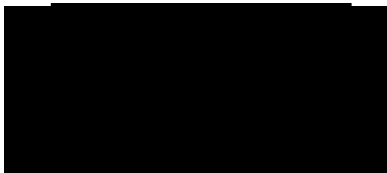
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27257121	AR-BH01	EW3	5.00	01/12/2022
27257137	AR-BH02	EW3	10.00	01/12/2022
27257151	DUP-BH04	EW3	5.00	01/12/2022
27257164	HR-BH01	EW3	4.00	01/12/2022
27257177	MS-BH07	EW3	11.00	01/12/2022
27257191	MS-BH17	EW3	6.00	01/12/2022
27257204	MS-BH23	EW3	3.00	01/12/2022
27257217	MS-BH25	EW3	3.00	01/12/2022
27257231	Tripblank-1	EW3	0.00 - 0.00	02/12/2022
27257134	Tripblank-2	EW3	0.00 - 0.00	02/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	27257121	27257137	27257151
	Customer Sample Reference	AR-BH01	AR-BH02	DUP-BH04
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	AGS Reference	EW3	EW3	EW3
	Depth (m)	5.00	10.00	5.00
	Container	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)
	Sample Type	GW	GW	GW
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8		
VOC MS (W)	All	NDPs: 0 Tests: 8		

27257177	MS-BH07	EW3	11.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
27257164	HR-BH01	EW3	4.00	HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
27257151	DUP-BH04	EW3	5.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33

Report Number: 672263

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type			
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)				
	27257191	MS-BH17	EW3	6.00												
	27257204	MS-BH23	EW3	3.00												
	27257217	MS-BH25	EW3	3.00												
Ammonium Low	All	NDPs: 0 Tests: 8						X					X			
Anions by Kone (w)	All	NDPs: 0 Tests: 8					X						X			X
Chromium III	All	NDPs: 0 Tests: 8						X					X			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8						X					X			
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8					X						X			
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8								X				X		
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8								X				X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8					X						X			X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8						X					X			
Mercury Dissolved	All	NDPs: 0 Tests: 8						X					X			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8								X				X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8					X						X			X
pH Value	All	NDPs: 0 Tests: 8						X					X			X
Total EPH (aq)	All	NDPs: 0 Tests: 8					X						X			X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8											X			

27257217	MS-BH25	EW3	3.00	Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Unfiltered (ALE204)	GW
				HNO3 Filtered (ALE204)	GW
				H2SO4 (ALE244)	GW
					X
					X
					X
					X
					X
					X
					X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	27257191	27257204	27257217
	Customer Sample Reference	MS-BH17	MS-BH23	MS-BH25
AGS Reference	EW3	EW3	EW3	
Depth (m)	6.00	3.00	3.00	
Container	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)
Sample Type	GW	GW	GW	GW
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8	X	X
VOC MS (W)	All	NDPs: 0 Tests: 8	X	X

27257217	MS-BH25	EW3	3.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01		AR-BH02		DUP-BH04		HR-BH01		MS-BH07		MS-BH17	
#	ISO17025 accredited.		AR-BH01	F-PR4LYB-K217	AR-BH02	F-XC3LYB-RHOG	DUP-BH04	F-YUKYB-R2M7	HR-BH01	F-JA6LYB-UZTA	MS-BH07	F-S7SKYB-LKQ9	MS-BH17	F-ULTKYB-QFNK
M	mCERTS accredited.	5.00	5.00	10.00	10.00	5.00	5.00	4.00	11.00	6.00	6.00	6.00	6.00	
aq	Aqueous / settled sample.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
diss.filt	Dissolved / filtered sample.	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	
tot.unfilt	Total / unfiltered sample.	14:50	14:50	14:00	14:00	12:00	12:00	16:00	10:00	10:00	10:00	10:50	10:50	
	Subcontracted - refer to subcontractor report for accreditation status.	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33	
(F)	Trigger breach confirmed	27257121	27257121	27257137	27257137	27257151	27257151	27257164	27257177	27257177	27257177	27257191	27257191	
1-4*§@	Sample deviation (see appendix)	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3	
Component	LOD/Units	Method	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	AGS Reference	
Organic Carbon, Total	<3 mg/l	TM090	21.8	16.8	8.55	14.6	15.1	18.6	#	#	#	#	#	
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.45	0.935	0.2	1.72	0.723	1.82	#	#	#	#	#	
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	1.86	1.2	0.257	2.21	0.93	2.35	#	#	#	#	#	
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003	0.00611	<0.003	#	#	#	#	#	
Arsenic (diss.filt)	<0.5 µg/l	TM152	10.2	7.29	14	21.6	3.51	74.2	#	#	#	#	#	
Boron (diss.filt)	<10 µg/l	TM152	119	136	139	176	187	77.3	#	#	#	#	#	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	#	#	#	#	#	
Chromium (diss.filt)	<1 µg/l	TM152	1.96	1.41	<1	1.06	6.11	1.16	#	#	#	#	#	
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	<0.3	<0.3	1.95	<0.3	#	#	#	#	#	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	0.514	<0.2	<0.2	<0.2	#	#	#	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	2.76	3.88	9.2	1.13	6.93	4.19	#	#	#	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	1.57	<1	#	#	#	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	3.13	4.06	2.77	3.85	4.1	5.31	#	#	#	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	578	423	401	214	399	180	#	#	#	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	32.1	8.36	7.84	54.4	1.19	36.5	#	#	#	#	#	
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1630	1340	1190	691	1150	551	#	#	#	#	#	
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	114	<100	<100	<100	<100	<100	#	#	#	#	#	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	114	<100	<100	<100	<100	<100	#	#	#	#	#	
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	#	#	#	#	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	#	#	#	#	#	
Sulphate	<2 mg/l	TM184	950	1110	730	431	699	449	#	#	#	#	#	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	<0.3	0.464	0.738	<0.3	#	#	#	#	#	
Phenol (low level)	<0.5 µg/l	TM255	<0.5	2.26	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	4.8	<0.5	<0.5	#	#	#	#	#	
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	2.26	<0.5	4.8	<0.5	<0.5	#	#	#	#	#	
pH	<1 pH Units	TM256	7.15	7.2	7.42	6.72	7.36	6.92	#	#	#	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5	#	#	#	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	#	#	#	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	#	#	#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH23	MS-BH25			
#	ISO17025 accredited.		F-SUUKYB-GMGB	F-Y5ZKYB-MXOG			
M	mCERTS accredited.		3.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	01/12/2022	01/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:45	13:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/12/2022	03/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-33	221203-33			
	(F) Trigger breach confirmed	SDG Ref	27257204	27257217			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	8.45	29.3	#	#	
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.26	9.01	#	#	
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	0.334	11.6	#	#	
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	13.8	10.3	#	#	
Boron (diss.filt)	<10 µg/l	TM152	142	113	#	#	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	#	#	
Chromium (diss.filt)	<1 µg/l	TM152	<1	1.28	#	#	
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	2.18	#	#	
Lead (diss.filt)	<0.2 µg/l	TM152	0.492	0.546	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	8.74	3.29	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	<1	3.24	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	1.88	34	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	401	281	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	7.78	0.497	#	#	
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1170	775			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	113	#	#	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	113			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	#	#	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	0.066	#	#	
Sulphate	<2 mg/l	TM184	736	261	#	#	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	#	#	
Phenol (low level)	<0.5 µg/l	TM255	<0.5	26.9			
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<2.5			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<2.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	26.9			
pH	<1 pH Units	TM256	7.36	8.26	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	DUP-BH04	HR-BH01	MS-BH07	MS-BH17
#	ISO17025 accredited.		F-PR4LYB-K217	F-XC3LYB-RHOG	F-YUKYB-R2M7	F-JA6LYB-UZTA	F-STSKYB-LKQ9	F-ULTKYB-QFNK
M	mCERTS accredited.	Depth (m)	5.00	10.00	5.00	4.00	11.00	6.00
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Date Sampled	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022
tot.unfilt	Total / unfiltered sample.	Sample Time	14:50	14:00	12:00	16:00	10:00	10:50
	* Subcontracted - refer to subcontractor report for accreditation status.	Date Received	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	221203-33	221203-33	221203-33	221203-33	221203-33	221203-33
	(F) Trigger breach confirmed	Lab Sample No.(s)	27257121	27257137	27257151	27257164	27257177	27257191
	1-4* @ Sample deviation (see appendix)	AGS Reference	EW3	EW3	EW3	EW3	EW3	EW3
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 #	<0.01 #	<0.01 #	0.0149 #	<0.01 #	0.0242 #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	0.0076 #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	0.0054 #	<0.005 #	0.0084 #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	0.0193 #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH23	MS-BH25			
#	ISO17025 accredited.		F-SUUKYB-GMGB	F-Y5ZKYB-MXOG			
M	mCERTS accredited.		3.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	01/12/2022	01/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:45	13:00			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	03/12/2022	03/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221203-33	221203-33			
(F)	Trigger breach confirmed	SDG Ref	27257204	27257217			
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)	EW3	EW3			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	0.0308	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	0.0059	#	#	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	0.0087	#	#	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	#	#	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33
Client Ref.: F212561

Report Number: 672263
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	AR-BH01		AR-BH02		DUP-BH04		HR-BH01		MS-BH07		MS-BH17	
#	ISO17025 accredited.		F-PR4LYB-K217	5.00	F-XC3LYB-RHOG	10.00	F-IYUKYB-R2M7	5.00	F-JA6LYB-UZTA	4.00	F-S7SKYB-LKQ9	11.00	F-ULTKYB-QFNK	6.00
M	mCERTS accredited.	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
aq	Aqueous / settled sample.	Depth (m)	Sample Type	Date Sampled	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference						
tot.unfilt	Total / unfiltered sample.	01/12/2022	01/12/2022	01/12/2022	01/12/2022	221203-33	27257121	EW3	01/12/2022	01/12/2022	01/12/2022	01/12/2022	01/12/2022	
	Subcontracted - refer to subcontractor report for accreditation status.	14:50	14:00	12:00	16:00	221203-33	27257151	EW3	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	
	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	03/12/2022	03/12/2022	03/12/2022	03/12/2022	221203-33	27257164	EW3	03/12/2022	03/12/2022	03/12/2022	03/12/2022	03/12/2022	
(F)	Trigger breach confirmed	221203-33	221203-33	221203-33	221203-33	221203-33	27257177	EW3	221203-33	221203-33	221203-33	221203-33	221203-33	
1-4*§@	Sample deviation (see appendix)	27257121	27257137	27257151	27257164	27257191			27257164	27257177	27257191	27257191	27257191	
		EW3	EW3	EW3	EW3	EW3			EW3	EW3	EW3	EW3	EW3	
Component	LOD/Units	Method												
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	#	#	#	#	
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221203-33

Report Number: 672263

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

VOC MS (W)

Results Legend		Customer Sample Ref.	MS-BH23	MS-BH25			
#	ISO17025 accredited.		F-SUUKYB-GMCB	F-Y5ZKYB-MXOG			
M	mCERTS accredited.		3.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	01/12/2022	01/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	11:45	13:00			
* Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	03/12/2022	03/12/2022			
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Date Received	221203-33	221203-33			
(F) Trigger breach confirmed		SDG Ref	27257204	27257217			
1-4*% Sample deviation (see appendix)		Lab Sample No.(s)	EW3	EW3			
AGS Reference							
Component	LOD/Units	Method					
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	#	#	
Benzene	<1 µg/l	TM208	<1	<1	#	#	
Toluene	<1 µg/l	TM208	<1	<1	#	#	
Ethylbenzene	<1 µg/l	TM208	<1	<1	#	#	
m,p-Xylene	<1 µg/l	TM208	<1	<1	#	#	
o-Xylene	<1 µg/l	TM208	<1	<1	#	#	
Sum of BTEX	<5 µg/l	TM208	<5	<5			



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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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Superseded Report:

Test Completion Dates

Lab Sample No(s)	27257121	27257137	27257151	27257164	27257177	27257191	27257204	27257217
Customer Sample Ref.	AR-BH01	AR-BH02	DUP-BH04	HR-BH01	MS-BH07	MS-BH17	MS-BH23	MS-BH25
AGS Ref.	EW3	EW3	EW3	EW3	EW3	EW3	EW3	EW3
Depth	5.00	10.00	5.00	4.00	11.00	6.00	3.00	3.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Ammonium Low	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Anions by Kone (w)	12-Dec-2022	09-Dec-2022	12-Dec-2022	12-Dec-2022	12-Dec-2022	09-Dec-2022	12-Dec-2022	09-Dec-2022
Chromium III	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Dissolved Metals by ICP-MS	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022
EPH (DRO) (C10-C40) Aqueous (W)	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022
GRO by GC-FID (W)	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022	07-Dec-2022
Low Level Cyanide (W)	08-Dec-2022	08-Dec-2022	08-Dec-2022	12-Dec-2022	08-Dec-2022	12-Dec-2022	08-Dec-2022	12-Dec-2022
Low Level Hexavalent Chromium (w)	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Low Level Phenols by HPLC (W)	07-Dec-2022	07-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022	08-Dec-2022
Mercury Dissolved	09-Dec-2022	09-Dec-2022	09-Dec-2022	12-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022	09-Dec-2022
Nitrite by Kone (w)	08-Dec-2022	08-Dec-2022	08-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	07-Dec-2022
PAH Spec MS - Aqueous (W)	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022	15-Dec-2022
pH Value	07-Dec-2022	08-Dec-2022	08-Dec-2022	07-Dec-2022	09-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
Total EPH (aq)	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022	14-Dec-2022
Total Metals by ICP-MS	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022	13-Dec-2022
Total Organic and Inorganic Carbon	08-Dec-2022	07-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022	08-Dec-2022
VOC MS (W)	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022	06-Dec-2022



CERTIFICATE OF ANALYSIS

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Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 22 December 2022
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221218-10
Your Reference: F212561
Location: Keadby 3
Report No: 673178
Order Number: 386/121917/CP

We received 2 samples on Saturday December 17, 2022 and 2 of these samples were scheduled for analysis which was completed on Wednesday December 21, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager



CERTIFICATE OF ANALYSIS

Validated

SDG: 221218-10
Client Ref.: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27335344	Tripblank-1	EW5	0.00 - 0.00	16/12/2022
27335346	Tripblank-2	EW5	0.00 - 0.00	16/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221218-10
Client Ref.: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27335344	27335346
Customer Sample Reference	Tipblank-1	Tipblank-2
AGS Reference	EWS	EWS
Depth (m)	0.00 - 0.00	0.00 - 0.00
Container	Vial (ALE297)	Vial (ALE297)
Sample Type	UNL	UNL

VOC MS (W)	All	NDPs: 0 Tests: 2					
			X	X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221218-10
Client Ref.: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	Tripblank-1	Tripblank-2			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	F-QONCZB-6D1D	F-PRNCZB-P3PZ			
M	mCERTS accredited.		0.00 - 0.00	0.00 - 0.00			
aq	Aqueous / settled sample.		Unspecified Liquid (UNL)	Unspecified Liquid (UNL)			
diss.filt	Dissolved / filtered sample.		16/12/2022	16/12/2022			
tot.unfilt	Total / unfiltered sample.		12:00	12:00			
	* Subcontracted - refer to subcontractor report for accreditation status.		17/12/2022	17/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		221218-10	221218-10			
	(F) Trigger breach confirmed		27335344	27335346			
	1-4*\$@ Sample deviation (see appendix)		EW5	EW5			
Component	LOD/Units		Method				
Toluene-d8**	%	TM208	100	101			
			1	1			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1			
			1	1			
Benzene	<1 µg/l	TM208	<1	<1			
			1	1			
Toluene	<1 µg/l	TM208	<1	<1			
			1	1			
Ethylbenzene	<1 µg/l	TM208	<1	<1			
			1	1			
m,p-Xylene	<1 µg/l	TM208	<1	<1			
			1	1			
o-Xylene	<1 µg/l	TM208	<1	<1			
			1	1			
Sum of BTEX	<5 µg/l	TM208	<5	<5			
			1	1			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221218-10
Client Ref.: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221218-10
Client Ref.: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27335344	27335346
Customer Sample Ref.	Tripblank-1	Tripblank-2
AGS Ref.	EW5	EW5
Depth	0.00 - 0.00	0.00 - 0.00
Type	Unspecified Liq	Unspecified Liq
VOC MS (W)	21-Dec-2022	21-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221218-10
Client Ref: F212561

Report Number: 673178
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

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The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	31 December 2022
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221217-24
Your Reference:	F212561
Location:	Keadby 3
Report No:	674021
Order Number:	386/121917/CP

We received 8 samples on Saturday December 17, 2022 and 8 of these samples were scheduled for analysis which was completed on Saturday December 31, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

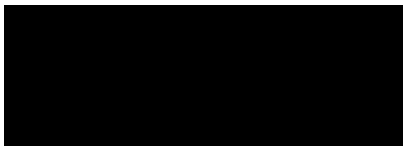
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27330143	BH101	EW5	19.00	15/12/2022
27330157	BH102	EW5	28.00	15/12/2022
27330170	BH103	EW5	25.00	15/12/2022
27330183	BH104	EW5	8.00	15/12/2022
27330196	DS111	EW5	4.00	15/12/2022
27330209	DUP-BH03	EW5	5.00	15/12/2022
27330223	HR-BH01	EW5	5.00	15/12/2022
27330236	MS-BH25	EW5	3.00	15/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.





CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Results Legend  Test  No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container														Sample Type											
		27330143	BH101	EW5	19.00	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	
		27330157	BH102	EW5	28.00	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	
		27330170	BH103	EW5	25.00	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	
						NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	
						GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Ammonium Low	All	NDPs: 0 Tests: 8					X								X															
Anions by Kone (w)	All	NDPs: 0 Tests: 8			X								X																X	
Chromium III	All	NDPs: 0 Tests: 8					X								X															
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8					X								X															
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8			X									X														X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8								X												X								
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8								X												X								
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8				X									X													X		
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8					X								X															
Mercury Dissolved	All	NDPs: 0 Tests: 8						X							X															
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8								X												X								
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8			X										X												X			
pH Value	All	NDPs: 0 Tests: 8				X									X													X		
Total EPH (aq)	All	NDPs: 0 Tests: 8			X									X												X				
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8								X												X								



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24

Report Number: 674021

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

Results Legend		Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type												
X Test	N No Determination Possible																		
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other		27330143	BH101	EW5	19.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW												
		27330157	BH102	EW5	28.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW												
		27330170	BH103	EW5	25.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW												
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8								X									
VOC MS (W)	All	NDPs: 0 Tests: 8														X			

27330209	DUP-BH03	EWS	5.00	0.5l glass bottle (ALE227)	GW							
				Vial (ALE297)	GW							X
27330196	DS111	EWS	4.00	NaOH (ALE245)	GW							
				HNO3 Unfiltered (ALE204)	GW							
				HNO3 Filtered (ALE204)	GW							
				H2SO4 (ALE244)	GW							X
				500ml Plastic (ALE208)	GW							
				250ml Amber Gl. PTFE/PE (ALE219)	GW							
				0.5l glass bottle (ALE227)	GW							
				Vial (ALE297)	GW							X
				NaOH (ALE245)	GW							
				HNO3 Unfiltered (ALE204)	GW							
27330183	BH104	EWS	8.00	HNO3 Filtered (ALE204)	GW							
				500ml Plastic (ALE208)	GW						X	
				250ml Amber Gl. PTFE/PE (ALE219)	GW							
				0.5l glass bottle (ALE227)	GW							
				Vial (ALE297)	GW							X
				NaOH (ALE245)	GW							
				HNO3 Unfiltered (ALE204)	GW							
				HNO3 Filtered (ALE204)	GW							
				500ml Plastic (ALE208)	GW							X
				250ml Amber Gl. PTFE/PE (ALE219)	GW							
				0.5l glass bottle (ALE227)	GW							
27330170	BH103	EWS	25.00	Vial (ALE297)	GW					X		
				NaOH (ALE245)	GW							
				HNO3 Unfiltered (ALE204)	GW							
				HNO3 Filtered (ALE204)	GW							
				H2SO4 (ALE244)	GW						X	
				HNO3 Filtered (ALE204)	GW							



CERTIFICATE OF ANALYSIS

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
27330209	DUP-BH03	EW5	5.00	HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219)	GW
27330223	HR-BH01	EW5	5.00	HNO3 Filtered (ALE204) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245)	GW
27330236	MS-BH25	EW5	3.00	HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219)	GW

Parameter	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	Test Results
Ammonium Low	All	NDPs: 0 Tests: 8					X
Anions by Kone (w)	All	NDPs: 0 Tests: 8					X
Chromium III	All	NDPs: 0 Tests: 8					X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8					X
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8					X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8					X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8					X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8					X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8					X
Mercury Dissolved	All	NDPs: 0 Tests: 8					X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8					X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8					X
pH Value	All	NDPs: 0 Tests: 8					X
Total EPH (aq)	All	NDPs: 0 Tests: 8					X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8					X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)			27330209	27330223	27330236		
	Customer Sample Reference			DUP-BH03	HR-BH01	MS-BH25		
AGS Reference			EW5	EW5	EW5	EW5		
Depth (m)			5.00	5.00	3.00	3.00		
Container			250ml Amber GI. PTFE/PE (ALE219)	Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)		
			500ml Plastic (ALE208)	500ml Plastic (ALE204)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	
Sample Type			GW	GW	GW	GW		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8						
VOC MS (W)	All	NDPs: 0 Tests: 8						

27330236	MS-BH25	EW5	3.00	Vial (ALE297)	GW									X
				NaOH (ALE245)	GW									
				HNO3 Unfiltered (ALE204)	GW									



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH03
# ISO17025 accredited.	M mCERTS accredited.		F-X0WAZB-41YH	F-1GXAZB-A8EK	F-0XYAZB-JULUP	F-CL1BZB-QGQR	F-Q3UAZB-XPEH	F-91SAZB-F6M6
aq Aqueous / settled sample.	diss.filt Dissolved / filtered sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
tot.unfilt Total / unfiltered sample.	Subcontracted - refer to subcontractor report for accreditation status.	Sample Type	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Trigger breach confirmed	Date Sampled	12:15	13:10	14:00	14:50	11:20	09:45
1-4* @ Sample deviation (see appendix)	AGS Reference	Sample Time	17/12/2022	17/12/2022	17/12/2022	17/12/2022	17/12/2022	17/12/2022
		Date Received	221217-24	221217-24	221217-24	221217-24	221217-24	221217-24
		SDG Ref	27330143	27330157	27330170	27330183	27330196	27330209
		Lab Sample No.(s)	EW5	EW5	EW5	EW5	EW5	EW5
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	9.68 #	23.8 #	23.9 #	3.64 2 #	<3 #	38.7 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.22 #	2.5 #	1.58 #	0.108 2 #	0.231 #	10.4 #
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.85 #	3.22 #	2.03 #	0.139 2 #	0.297 #	13.3 #
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003	0.00875	0.00405
Arsenic (diss.filt)	<0.5 µg/l	TM152	24.2 #	18.2 #	16.7 #	102 #	34.3 #	7.11 #
Boron (diss.filt)	<10 µg/l	TM152	18000 #	17800 #	26100 #	7140 #	1370 #	212 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	1.17 #	2.07 #	1.39 #	0.313 #	0.143 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #	8.75 #	4.05 #
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #	<0.3 #	1.13 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Nickel (diss.filt)	<0.4 µg/l	TM152	2.45 #	3.88 #	5.27 #	1.67 #	0.403 #	1.38 #
Selenium (diss.filt)	<1 µg/l	TM152	322 #	1 #	1.13 #	52.5 #	75.1 #	<1 #
Zinc (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #	<1 #	2.79 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	542 #	608 #	733 #	114 #	152 #	239 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0243 #	0.0585 #	4.14 #	0.037 #	<0.019 #	4.29 #
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1390	1650	2070	4.18	426	670
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	207 #	139 #	434 #	1730 #	144 #	<100 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	207	139	434	1730	144	<100
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #
Nitrite as NO2	<0.05 mg/l	TM184	2.18 #	<0.05 #	<0.05 #	0.26 #	1.41 #	<0.05 #
Sulphate	<2 mg/l	TM184	1240 #	1470 #	2140 #	325 #	366 #	232 #
Nitrate as NO3	<0.3 mg/l	TM184	8.14 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	0.67	10.1
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	0.67	10.1
pH	<1 pH Units	TM256	9.23 #	8.24 #	7.89 #	9.27 #	11.2 #	7.41 #
Cyanide, Total (low level)	<5 µg/l	TM279	<5 #	<5 #	<5 #	<5 #	<5 #	<5 #
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #	<2.5 #
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.003 #	<0.015 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25			
#	ISO17025 accredited.		F-OP4BZB-NCGD	F-CRRAZB-A618			
M	mCERTS accredited.		5.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	15/12/2022	15/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:50	10:15			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/12/2022	17/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-24	221217-24			
	(F) Trigger breach confirmed	SDG Ref	27330223	27330236			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	9.33	38.6			
			2 #	#			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.05	10.3			
			2 #	#			
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.64	13.3			
			2 #	#			
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	0.00475			
Arsenic (diss.filt)	<0.5 µg/l	TM152	22	7.06			
			#	#			
Boron (diss.filt)	<10 µg/l	TM152	229	201			
			#	#			
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08			
			#	#			
Chromium (diss.filt)	<1 µg/l	TM152	<1	4.75			
			#	#			
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3			
			#	#			
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2			
			#	#			
Nickel (diss.filt)	<0.4 µg/l	TM152	1.09	1.4			
			#	#			
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1			
			#	#			
Zinc (diss.filt)	<1 µg/l	TM152	3.98	<1			
			#	#			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	225	231			
			#	#			
Iron (Dis.Filt)	<0.019 mg/l	TM152	51.1	4.36			
			#	#			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	729	670			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100			
			#	#			
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01			
			#	#			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05			
			#	#			
Sulphate	<2 mg/l	TM184	470	234			
			#	#			
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3			
			#	#			
Phenol (low level)	<0.5 µg/l	TM255	<0.5	10.1			
Cresols (low level)	<0.5 µg/l	TM255	2.74	<0.5			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	2.74	10.1			
pH	<1 pH Units	TM256	7.64	7.36			
			#	#			
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5			
			#	#			
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5			
			#	#			
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.015			
			#	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH03
#	M		F-X0WAZB-41YH	F-1GXAZB-A8EK	F-0XYAZB-JULUP	F-CL1BZB-QGQR	F-Q3UAZB-XPEH	F-91SAZB-F6M6
aq	aq	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
tot.unfilt Total / unfiltered sample.	tot.unfilt Total / unfiltered sample.	Sample Type	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022
Subcontracted - refer to subcontractor report for accreditation status.		Date Sampled	12:15	13:10	14:00	14:50	11:20	09:45
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Sample Time	17/12/2022	17/12/2022	17/12/2022	17/12/2022	17/12/2022	17/12/2022
(F) Trigger breach confirmed		Date Received	221217-24	221217-24	221217-24	221217-24	221217-24	221217-24
1-4* @ Sample deviation (see appendix)		SDG Ref	27330143	27330157	27330170	27330183	27330196	27330209
		Lab Sample No.(s)	EW5	EW5	EW5	EW5	EW5	EW5
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	0.0227	<0.01	<0.2	0.263	0.0127	<0.01
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	0.0665	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	0.0403	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Fluoranthene (aq)	<0.005 µg/l	TM178	0.0385	0.0114	<0.1	1.95	0.0192	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	0.15	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0179	0.00728	<0.1	0.586	0.00661	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	0.0424	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Chrysene (aq)	<0.005 µg/l	TM178	0.0257	<0.005	<0.1	1.14	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Pyrene (aq)	<0.005 µg/l	TM178	0.0337	0.012	<0.1	1.82	0.0183	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	0.0194	<0.005	<0.1	0.929	0.0103	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	0.0238	<0.005	<0.1	1.46	0.0194	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	0.0107	<0.005	<0.1	0.486	0.00782	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	0.0158	<0.002	<0.04	0.993	0.0119	<0.002
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	<0.005	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	<0.1	0.688	<0.005	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	0.0128	<0.005	<0.1	0.465	0.0107	<0.005
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	0.221	<0.082	<1.64	11.1	0.117	<0.082
			◆ #	◆ #	◆ #	◆ #	◆ #	◆ #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	HR-BH01	MS-BH25			
#	ISO17025 accredited.		F-OP4BZB-NCGD	F-CRRAZB-A618			
M	mCERTS accredited.		5.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	15/12/2022	15/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	15:50	10:15			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	17/12/2022	17/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-24	221217-24			
	(F) Trigger breach confirmed	SDG Ref	27330223	27330236			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01			
			◆ #	◆ #			
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002			
			◆ #	◆ #			
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005			
			◆ #	◆ #			
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082			
			◆ #	◆ #			



CERTIFICATE OF ANALYSIS

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.							
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fltr Dissolved / filtered sample. tot.unfltr Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*@\$ Sample deviation (see appendix)										
		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH101 F-X0WAZB-41YH 19.00 Ground Water (GW) 15/12/2022 12:15 17/12/2022 221217-24 27330143 EW5	BH102 F-1GXAZB-A8EK 28.00 Ground Water (GW) 15/12/2022 13:10 17/12/2022 221217-24 27330157 EW5	BH103 F-0XYAZB-JULUP 25.00 Ground Water (GW) 15/12/2022 14:00 17/12/2022 221217-24 27330170 EW5	BH104 F-CL1BZB-QGQR 8.00 Ground Water (GW) 15/12/2022 14:50 17/12/2022 221217-24 27330183 EW5	DS111 F-Q3UAZB-XPEH 4.00 Ground Water (GW) 15/12/2022 11:20 17/12/2022 221217-24 27330196 EW5	DUP-BH03 F-91SAZB-F6M6 5.00 Ground Water (GW) 15/12/2022 09:45 17/12/2022 221217-24 27330209 EW5		
Component	LOD/Units	Method								
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
Toluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<10 #	<1 #	<1 #	<1 #	
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<50	<5	<5	<5	



CERTIFICATE OF ANALYSIS

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.					
# ISO17025 accredited.			HR-BH01	MS-BH25				
M mCERTS accredited.			F-OP4BZB-NCGD	F-CRRAZB-A618				
AQ Aqueous / settled sample.			5.00	3.00				
diss.fltr Dissolved / filtered sample.			Ground Water (GW)	Ground Water (GW)				
tot.unfltr Total / unfiltered sample.								
* Subcontracted - refer to subcontractor report for accreditation status.			Depth (m)					
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.			Sample Type					
(F) Trigger breach confirmed			Date Sampled					
1-4*\$@ Sample deviation (see appendix)			Sample Time					
			Date Received					
			SDG Ref					
			Lab Sample No.(s)					
			AGS Reference					
Component	LOD/Units	Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	#	#		
Benzene	<1 µg/l	TM208	<1	<1	#	#		
Toluene	<1 µg/l	TM208	<1	<1	#	#		
Ethylbenzene	<1 µg/l	TM208	<1	<1	#	#		
m,p-Xylene	<1 µg/l	TM208	<1	<1	#	#		
o-Xylene	<1 µg/l	TM208	<1	<1	#	#		
Sum of BTEX	<5 µg/l	TM208	<5	<5				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
Client Ref.: F212561

Report Number: 674021
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-24
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Superseded Report:

Test Completion Dates

Lab Sample No(s)	27330143	27330157	27330170	27330183	27330196	27330209	27330223	27330236
Customer Sample Ref.	BH101	BH102	BH103	BH104	DS111	DUP-BH03	HR-BH01	MS-BH25
AGS Ref.	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5
Depth	19.00	28.00	25.00	8.00	4.00	5.00	5.00	3.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water

Ammonium Low	22-Dec-2022	22-Dec-2022	22-Dec-2022	23-Dec-2022	23-Dec-2022	22-Dec-2022	20-Dec-2022	22-Dec-2022
Anions by Kone (w)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Chromium III	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022
Dissolved Metals by ICP-MS	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022
EPH (DRO) (C10-C40) Aqueous (W)	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022
GRO by GC-FID (W)	22-Dec-2022	22-Dec-2022	22-Dec-2022	28-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022
Low Level Cyanide (W)	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022
Low Level Hexavalent Chromium (w)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Low Level Phenols by HPLC (W)	21-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	28-Dec-2022	23-Dec-2022	28-Dec-2022
Mercury Dissolved	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022
Nitrite by Kone (w)	21-Dec-2022	21-Dec-2022	20-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022	20-Dec-2022	21-Dec-2022
PAH Spec MS - Aqueous (W)	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022
pH Value	21-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	21-Dec-2022	21-Dec-2022	28-Dec-2022	21-Dec-2022
Total EPH (aq)	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022	30-Dec-2022
Total Metals by ICP-MS	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022
Total Organic and Inorganic Carbon	19-Dec-2022	19-Dec-2022	19-Dec-2022	19-Dec-2022	19-Dec-2022	19-Dec-2022	19-Dec-2022	19-Dec-2022
VOC MS (W)	21-Dec-2022	21-Dec-2022	21-Dec-2022	22-Dec-2022	22-Dec-2022	21-Dec-2022	21-Dec-2022	22-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221217-24
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Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation: 05 January 2023
Customer: Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG): 221217-29
Your Reference: F212561
Location: Keadby 3
Report No: 674305
Order Number: 386/121917/CP

This report has been revised and directly supersedes 673718 in its entirety.

We received 8 samples on Thursday December 15, 2022 and 8 of these samples were scheduled for analysis which was completed on Thursday January 05, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

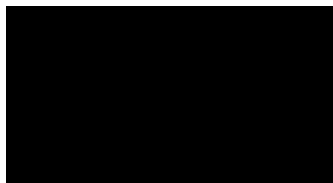
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27330431	MS-BH01	EW5	7.00	13/12/2022
27330444	MS-BH02	EW5	8.00	13/12/2022
27330457	MS-BH03	EW5	4.00	13/12/2022
27330470	MS-BH05	EW5	6.00	13/12/2022
27330484	MS-BH10	EW5	10.00	13/12/2022
27330497	MS-BH19	EW5	5.00	13/12/2022
27330510	MS-BH20	EW5	8.00	13/12/2022
27330523	MS-BH21	EW5	17.00	13/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Results Legend <div style="font-size: small; margin-top: 5px;"> X Test N No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type		
	27330431	MS-BH01	EW5	7.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW		
	27330444	MS-BH02	EW5	8.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW		
	27330457	MS-BH03	EW5	4.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW		
Ammonium Low	All	NDPs: 0 Tests: 8			X	X		
Anions by Kone (w)	All	NDPs: 0 Tests: 8			X	X		
Chromium III	All	NDPs: 0 Tests: 8			X	X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8			X	X		
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8			X	X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8			X	X		
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8			X	X		
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8			X	X		
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8			X	X		
Mercury Dissolved	All	NDPs: 0 Tests: 8			X	X		
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8			X	X		
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8			X	X		
pH Value	All	NDPs: 0 Tests: 8			X	X		
Total EPH (aq)	All	NDPs: 0 Tests: 8			X	X		
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8			X	X		

27330484		MS-BH10		EW5		10.00		Vial (ALE297)		GW																																	
27330470		MS-BH05		EW5		6.00		Vial (ALE297)		GW																																	
27330457		MS-BH03		EW5		4.00		Vial (ALE297)		GW																																	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px; display: flex; align-items: center; justify-content: center;">N</div> No Determination Possible </div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27330431	MS-BH01	EW5	7.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW
		27330444	MS-BH02	EW5	8.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244)	GW
		27330457	MS-BH03	EW5	4.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244)	GW
	Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8			X	
	VOC MS (W)	All	NDPs: 0 Tests: 8			X	X

27330484	MS-BH10	EW5	10.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
27330470	MS-BH05	EW5	6.00	HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
27330457	MS-BH03	EW5	4.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW				
				NaOH (ALE245)	GW				



CERTIFICATE OF ANALYSIS

Validated

 SDG: 221217-29
 Client Ref.: F212561

 Report Number: 674305
 Location: Keadby 3

Superseded Report: 673718

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
X Test N No Determination Possible	27330497	MS-BH19	EW5	5.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW
	27330510	MS-BH20	EW5	8.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27330523	MS-BH21	EW5	17.00	500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227)	GW
Ammonium Low	All	NDPs: 0 Tests: 8			X	
Anions by Kone (w)	All	NDPs: 0 Tests: 8		X		X
Chromium III	All	NDPs: 0 Tests: 8		X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8		X		X
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8		X		X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8			X	X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8			X	X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8		X		X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8		X		X
Mercury Dissolved	All	NDPs: 0 Tests: 8		X		X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8			X	X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8		X		X
pH Value	All	NDPs: 0 Tests: 8		X		X
Total EPH (aq)	All	NDPs: 0 Tests: 8		X		X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8			X	X

27330523	MS-BH21	EW5	17.00																			
				Vial (ALE297)	GW																	
				NaOH (ALE245)	GW																	
				HNO3 Unfiltered (ALE204)	GW																	
				HNO3 Filtered (ALE204)	GW																	
				H2SO4 (ALE244)	GW																	
										X												
									X													
									X													
											X											
												X										
										X												
													X									
																						X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type	
				500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)		
27330497	MS-BH19	EW5	5.00	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
27330510	MS-BH20	EW5	8.00	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
27330523	MS-BH21	EW5	17.00	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Total Organic and Inorganic Carbon		All	NDPs: 0 Tests: 8				X					X	
VOC MS (W)		All	NDPs: 0 Tests: 8							X			X

27330523	MS-BH21	EW5	17.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH02	MS-BH03	MS-BH05	MS-BH10	MS-BH19
#	ISO17025 accredited.		F-WD97ZB-1HAW	F-5E17ZB-E5HW	F-UVB7ZB-D7NG	F-9M27ZB-9VCZ	F-BSD7ZB-X3G6	F-M407ZB-9PZY
M	mCERTS accredited.	Depth (m)	7.00	8.00	4.00	6.00	10.00	5.00
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Date Sampled	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022
tot.unfilt	Total / unfiltered sample.	Date Received	13:15	10:45	14:50	11:35	15:50	10:00
	* Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref	221217-29	221217-29	221217-29	221217-29	221217-29	221217-29
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Lab Sample No.(s)	27330431	27330444	27330457	27330470	27330484	27330497
	(F) Trigger breach confirmed	AGS Reference	EW5	EW5	EW5	EW5	EW5	EW5
	1-4* @ Sample deviation (see appendix)							
Component	LOD/Units	Method						
Organic Carbon, Total	<3 mg/l	TM090	18.1	26.1	14.8	14.6	11.3	8.94
			#	#	#	#	#	@ #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.77	1.24	1.83	2.56	1.69	3.4
			#	#	#	#	#	#
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	3.56	1.59	2.35	3.29	2.18	4.37
			#	#	#	#	#	#
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	<0.003	<0.003	0.00521
			#	#	#	#	#	#
Arsenic (diss.filt)	<0.5 µg/l	TM152	123	48.7	91.2	214	45	2.35
			#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152	53.3	107	39.5	53.2	62.3	64.3
			#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	0.219	<0.08
			#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	5.21
			#	#	#	#	#	#
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	<0.3	<0.3	<0.3	1.15
			#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
			#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	1.72	9.41	2.05	3.5	1.19	12.7
			#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152	2.16	6.12	2.74	2.62	1.17	24.6
			#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	232	144	269	298	246	186
			#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	10.5	18.4	20.5	58	4.22	0.743
			#	#	#	#	#	#
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1150	427	780	860	663	530
			#	#	#	#	#	#
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	103	<100	<100	<100	<100	<100
			#	#	#	#	#	#
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	103	<100	<100	<100	<100	<100
			#	#	#	#	#	#
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
			#	#	#	#	#	#
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	0.154	<0.05	<0.05	<0.05
			#	#	#	#	#	#
Sulphate	<2 mg/l	TM184	497	222	545	691	500	409
			#	#	#	#	#	#
Nitrate as NO3	<0.3 mg/l	TM184	0.997	<0.3	<0.3	<0.3	<0.3	<0.3
			#	#	#	#	#	#
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
			#	#	#	#	#	#
pH	<1 pH Units	TM256	7.42	7.15	7.45	6.71	7.7	6.81
			#	#	#	#	#	#
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5
			#	#	#	#	#	#
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
			#	#	#	#	#	#
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
			#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH21			
#	ISO17025 accredited.		F-KJA7ZB-8SJ3	F-X447ZB-8KPO			
M	mCERTS accredited.		8.00	17.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	13/12/2022	13/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:00	12:20			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	15/12/2022	15/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-29	221217-29			
	(F) Trigger breach confirmed	SDG Ref	27330510	27330523			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	14.3	14.2	#	@ #	
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	2.03	1.89	#	#	
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.62	2.43	#	#	
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	0.00544	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	3.27	24.6	#	#	
Boron (diss.filt)	<10 µg/l	TM152	83.3	85.2	#	#	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	#	#	
Chromium (diss.filt)	<1 µg/l	TM152	5.44	<1	#	#	
Copper (diss.filt)	<0.3 µg/l	TM152	1.01	<0.3	#	#	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	4.77	2.09	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	1.16	<1	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	5.03	7.4	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	303	378	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	17.9	#	#	
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	926	1120			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100	#	#	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	#	#	
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	#	#	
Sulphate	<2 mg/l	TM184	1080	821	#	#	
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	#	#	
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Cresols (low level)	<0.5 µg/l	TM255	0.5	1.15			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	0.96			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	0.5	2.11			
pH	<1 pH Units	TM256	7.92	7.33	#	#	
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	#	#	
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	#	#	
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

GRO by GC-FID (W)

Table with columns: Results Legend, Customer Sample Ref., MS-BH01, MS-BH02, MS-BH03, MS-BH05, MS-BH10, MS-BH19, Component, LOD/Units, Method, and detection values (<10, <100).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

GRO by GC-FID (W)

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed 1-4* @ Sample deviation (see appendix)	Customer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		MS-BH20 F-KJA7ZB-8SJ3 8.00 Ground Water (GW) 13/12/2022 14:00 15/12/2022 221217-29 27330510 EW5	MS-BH21 F-X447ZB-8KPO 17.00 Ground Water (GW) 13/12/2022 12:20 15/12/2022 221217-29 27330523 EW5			
Component	LOD/Units	Method					
GRO >C5-C10	<10 µg/l	TM245	<10	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH01	MS-BH02	MS-BH03	MS-BH05	MS-BH10	MS-BH19
#	ISO17025 accredited.		F-WD97ZB-1HAW	F-5E17ZB-E5HW	F-UVB7ZB-D7NG	F-9M27ZB-9VCZ	F-BSD7ZB-X3G6	F-M407ZB-9PZY
M	mCERTS accredited.		7.00	8.00	4.00	6.00	10.00	5.00
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
diss.filt	Dissolved / filtered sample.	Sample Type	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022	13/12/2022
tot.unfilt	Total / unfiltered sample.	Date Sampled	13:15	10:45	14:50	11:35	15:50	10:00
	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022
	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-29	221217-29	221217-29	221217-29	221217-29	221217-29
	(F) Trigger breach confirmed	SDG Ref	27330431	27330444	27330457	27330470	27330484	27330497
	1-4*%@ Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5	EW5	EW5	EW5	EW5
		AGS Reference						
Component	LOD/Units	Method						
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01 #	<0.01 #	<0.01 #	0.0177 #	<0.01 #	<0.01 #
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Fluorene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Chrysene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Pyrene (aq)	<0.005 µg/l	TM178	0.0071 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #	<0.002 #
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #	<0.082 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH20	MS-BH21			
#	ISO17025 accredited.		F-KJA7ZB-8SJ3	F-X447ZB-8KPO			
M	mCERTS accredited.		8.00	17.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	13/12/2022	13/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:00	12:20			
tot.unfilt	Total / unfiltered sample.	Sample Time	15/12/2022	15/12/2022			
*	Subcontracted - refer to subcontractor report for accreditation status.	Date Received	221217-29	221217-29			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	SDG Ref	27330510	27330523			
(F)	Trigger breach confirmed	Lab Sample No.(s)	EW5	EW5			
1-4*@\$	Sample deviation (see appendix)	AGS Reference					
Component	LOD/Units	Method					
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	#	#	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29

Report Number: 674305

Superseded Report: 673718

Client Ref.: F212561

Location: Keadby 3

VOC MS (W)

Table with columns for Results Legend, Customer Sample Ref., MS-BH01, MS-BH02, MS-BH03, MS-BH05, MS-BH10, MS-BH19, Component, LOD/Units, Method, and numerical results for various VOCs like MTBE, Benzene, Toluene, etc.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-29
Client Ref.: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

27330431	27330444	27330457	27330470	27330484	27330497	27330510	27330523
MS-BH01	MS-BH02	MS-BH03	MS-BH05	MS-BH10	MS-BH19	MS-BH20	MS-BH21
EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5
7.00	8.00	4.00	6.00	10.00	5.00	8.00	17.00
Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water

Ammonium Low	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022
Anions by Kone (w)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Chromium III	31-Dec-2022	31-Dec-2022	31-Dec-2022	28-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022
Dissolved Metals by ICP-MS	04-Jan-2023	04-Jan-2023	05-Jan-2023	28-Dec-2022	05-Jan-2023	05-Jan-2023	05-Jan-2023
EPH (DRO) (C10-C40) Aqueous (W)	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022
GRO by GC-FID (W)	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022
Low Level Cyanide (W)	20-Dec-2022	20-Dec-2022	20-Dec-2022	22-Dec-2022	20-Dec-2022	20-Dec-2022	22-Dec-2022
Low Level Hexavalent Chromium (w)	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022
Low Level Phenols by HPLC (W)	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022
Mercury Dissolved	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022
Nitrite by Kone (w)	20-Dec-2022	17-Dec-2022	20-Dec-2022	21-Dec-2022	20-Dec-2022	17-Dec-2022	20-Dec-2022
PAH Spec MS - Aqueous (W)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
pH Value	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022
Total EPH (aq)	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022
Total Metals by ICP-MS	28-Dec-2022	28-Dec-2022	28-Dec-2022	23-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Total Organic and Inorganic Carbon	18-Dec-2022	18-Dec-2022	18-Dec-2022	18-Dec-2022	18-Dec-2022	21-Dec-2022	18-Dec-2022
VOC MS (W)	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221217-29
Client Ref: F212561

Report Number: 674305
Location: Keadby 3

Superseded Report: 673718

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	05 January 2023
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221217-28
Your Reference:	F212561
Location:	Keadby 3
Report No:	674296
Order Number:	386/121917/CP

We received 2 samples on Wednesday December 14, 2022 and 2 of these samples were scheduled for analysis which was completed on Thursday January 05, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

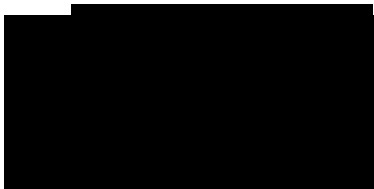
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27330389	DUP-BH01	EW5	5.00	12/12/2022
27330407	MS-BH09	EW5	9.00	12/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	27330389	27330407
Customer Sample Reference	DUP-BH01	MS-BH09
AGS Reference	EWS	EWS
Depth (m)	5.00	9.00
Container	250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) 500ml Plastic (ALE208) H2SO4 (ALE244) HNO3 Filtered (ALE204) HNO3 Unfiltered (ALE204) NaOH (ALE245) Vial (ALE297)	Vial (ALE297) NaOH (ALE245) HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) 0.5l glass bottle (ALE227) Vial (ALE297)
Sample Type	GW	GW

Analyte	All	NDPs: 0 Tests: 2	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)
Ammonium Low	All	NDPs: 0 Tests: 2					X								X				
Anions by Kone (w)	All	NDPs: 0 Tests: 2						X							X				
Chromium III	All	NDPs: 0 Tests: 2				X									X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				X									X				
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 2							X										
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2									X								X
Low Level Cyanide (W)	All	NDPs: 0 Tests: 2								X									X
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 2						X							X				
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 2					X								X				
Mercury Dissolved	All	NDPs: 0 Tests: 2					X								X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2									X								X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2							X								X		
pH Value	All	NDPs: 0 Tests: 2						X							X				
Total EPH (aq)	All	NDPs: 0 Tests: 2									X								X
Total Metals by ICP-MS	All	NDPs: 0 Tests: 2										X							X



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Results Legend

- X Test
- N No Determination Possible

Sample Types -

- S - Soil/Solid
- UNS - Unspecified Solid
- GW - Ground Water
- SW - Surface Water
- LE - Land Leachate
- PL - Prepared Leachate
- PR - Process Water
- SA - Saline Water
- TE - Trade Effluent
- TS - Treated Sewage
- US - Untreated Sewage
- RE - Recreational Water
- DW - Drinking Water Non-regulatory
- UNL - Unspecified Liquid
- SL - Sludge
- G - Gas
- OTH - Other

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type										
				Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)		H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)						
27330389	DUP-BH01	EW5	5.00	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	
27330407	MS-BH09	EW5	9.00	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	
Total Organic and Inorganic Carbon		All	NDPs: 0 Tests: 2												X											
VOC MS (W)		All	NDPs: 0 Tests: 2																						X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH09			
#	ISO17025 accredited.		F-OTK5ZB-UTT6	F-2CK5ZB-JOTW			
M	mCERTS accredited.		5.00	9.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	12/12/2022	12/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	14:00	14:45			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	14/12/2022	14/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-28	221217-28			
	(F) Trigger breach confirmed	SDG Ref	27330389	27330407			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	13.2	13.7			
			@ #	@ #			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	3.7	3.72			
			#	#			
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	4.76	4.78			
			#	#			
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	43.4	44.4			
			#	#			
Boron (diss.filt)	<10 µg/l	TM152	59.8	63			
			#	#			
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08			
			#	#			
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1			
			#	#			
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3			
			#	#			
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2			
			#	#			
Nickel (diss.filt)	<0.4 µg/l	TM152	11.7	11.8			
			#	#			
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1			
			#	#			
Zinc (diss.filt)	<1 µg/l	TM152	6.24	5.42			
			#	#			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	278	268			
			#	#			
Iron (Dis.Filt)	<0.019 mg/l	TM152	67.8	64			
			#	#			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	822	823			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100			
			#	#			
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01			
			#	#			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05			
			#	#			
Sulphate	<2 mg/l	TM184	622	618			
			#	#			
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3			
			#	#			
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5			
pH	<1 pH Units	TM256	6.61	6.73			
			#	#			
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5			
			#	#			
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5			
			#	#			
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003			
			#	#			



CERTIFICATE OF ANALYSIS

SDG: 221217-28
 Client Ref.: F212561

Report Number: 674296
 Location: Keadby 3

Superseded Report:

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	DUP-BH01	MS-BH09			
#	ISO17025 accredited.		F-OTK5ZB-UTT6	F-2CK5ZB-JOTW			
M	mCERTS accredited.		5.00	9.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type					
tot.unfilt	Total / unfiltered sample.	Date Sampled					
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time					
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Date Received					
(F)	Trigger breach confirmed	SDG Ref					
1-4*\$@	Sample deviation (see appendix)	Lab Sample No.(s)					
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10	<10 µg/l	TM245	<10	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100	<100			



CERTIFICATE OF ANALYSIS

SDG: 221217-28

Report Number: 674296

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

PAH Spec MS - Aqueous (W)

Results Legend			Customer Sample Ref.	DUP-BH01 F-OTK5ZB-UTT6 5.00 Ground Water (GW)	MS-BH09 F-2CK5ZB-JOTW 9.00 Ground Water (GW)			
#	LOD/Units	Method						
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery. (F) Trigger breach confirmed 1-4*\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
Naphthalene (aq)	<0.01 µg/l	TM178		0.0259	0.0314	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Anthracene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Phenanthrene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Fluorene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Chrysene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Pyrene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178		<0.002	<0.002	#	#	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178		<0.005	<0.005	#	#	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178		<0.082	<0.082	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-28
Client Ref.: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27330389	27330407
Customer Sample Ref.	DUP-BH01	MS-BH09
AGS Ref.	EW5	EW5
Depth	5.00	9.00
Type	Ground Water	Ground Water

Ammonium Low	22-Dec-2022	22-Dec-2022
Anions by Kone (w)	28-Dec-2022	28-Dec-2022
Chromium III	31-Dec-2022	31-Dec-2022
Dissolved Metals by ICP-MS	05-Jan-2023	05-Jan-2023
EPH (DRO) (C10-C40) Aqueous (W)	29-Dec-2022	29-Dec-2022
GRO by GC-FID (W)	23-Dec-2022	23-Dec-2022
Low Level Cyanide (W)	22-Dec-2022	22-Dec-2022
Low Level Hexavalent Chromium (w)	20-Dec-2022	20-Dec-2022
Low Level Phenols by HPLC (W)	21-Dec-2022	21-Dec-2022
Mercury Dissolved	22-Dec-2022	22-Dec-2022
Nitrite by Kone (w)	20-Dec-2022	20-Dec-2022
PAH Spec MS - Aqueous (W)	28-Dec-2022	28-Dec-2022
pH Value	21-Dec-2022	21-Dec-2022
Total EPH (aq)	29-Dec-2022	29-Dec-2022
Total Metals by ICP-MS	28-Dec-2022	28-Dec-2022
Total Organic and Inorganic Carbon	19-Dec-2022	19-Dec-2022
VOC MS (W)	22-Dec-2022	22-Dec-2022



CERTIFICATE OF ANALYSIS

SDG: 221217-28
Client Ref: F212561

Report Number: 674296
Location: Keadby 3

Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Fugro GeoServices Ltd - Keadby
Fugro House
Hithercroft Road
Wallingford
Oxfordshire
OX10 9RB

Attention: Karen Blackmore

CERTIFICATE OF ANALYSIS

Date of report Generation:	05 January 2023
Customer:	Fugro GeoServices Ltd - Keadby
Sample Delivery Group (SDG):	221217-30
Your Reference:	F212561
Location:	Keadby 3
Report No:	674297
Order Number:	386/121917/CP

We received 8 samples on Friday December 16, 2022 and 8 of these samples were scheduled for analysis which was completed on Thursday January 05, 2023. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

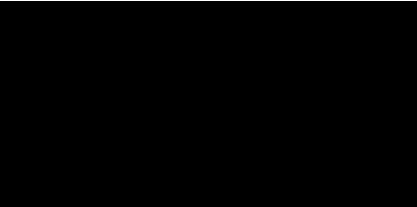
Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.



Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27330543	AR-BH01	EW5	5.00	14/12/2022
27330557	AR-BH02	EW5	10.00	14/12/2022
27330571	DUP-BH02	EW5	5.00	14/12/2022
27330584	MS-BH07	EW5	11.00	14/12/2022
27330597	MS-BH12	EW5	8.00	14/12/2022
27330610	MS-BH13	EW5	9.00	14/12/2022
27330623	MS-BH17	EW5	6.00	14/12/2022
27330636	MS-BH23	EW5	3.00	14/12/2022

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container												Sample Type		
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)			
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27330543	AR-BH01	EW5	5.00															
	27330557	AR-BH02	EW5	10.00															
	27330571	DUP-BH02	EW5	5.00															
Ammonium Low	All	NDPs: 0 Tests: 8								X									X
Anions by Kone (w)	All	NDPs: 0 Tests: 8				X									X				X
Chromium III	All	NDPs: 0 Tests: 8								X								X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8								X								X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8				X									X				X
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8												X				X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8									X							X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8					X								X				X
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8								X						X			
Mercury Dissolved	All	NDPs: 0 Tests: 8								X						X			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8													X				X
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8				X									X				X
pH Value	All	NDPs: 0 Tests: 8					X								X				X
Total EPH (aq)	All	NDPs: 0 Tests: 8				X								X				X	
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8									X					X			

27330597		MS-BH12		EW5		8.00	
27330584		MS-BH07		EW5		11.00	
27330571		DUP-BH02		EW5		5.00	
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					X
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW	X				
	500ml Plastic (ALE208)	GW		X			
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW			X		
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW				X	
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW		X			
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW			X		
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW			X		
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW	X				
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW		X			
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW	X				
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					
	500ml Plastic (ALE208)	GW					
	250ml Amber Gl. PTFE/PE (ALE219)	GW					
	0.5l glass bottle (ALE227)	GW					
	Vial (ALE297)	GW					
	NaOH (ALE245)	GW					
	HNO3 Unfiltered (ALE204)	GW					
	HNO3 Filtered (ALE204)	GW					
	H2SO4 (ALE244)	GW					



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type							
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)		500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)				
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27330543	AR-BH01	EW5	5.00																
	27330557	AR-BH02	EW5	10.00																
	27330571	DUP-BH02	EW5	5.00																
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8																		
VOC MS (W)	All	NDPs: 0 Tests: 8																		

27330597	MS-BH12	EWS	8.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
27330584	MS-BH07	EWS	11.00	HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW	X			
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
27330571	DUP-BH02	EWS	5.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				500ml Plastic (ALE208)	GW				
				250ml Amber Gl. PTFE/PE (ALE219)	GW				
				0.5l glass bottle (ALE227)	GW				
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div>X Test</div> <div>N No Determination Possible</div> </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		27330610	MS-BH13	EW5	9.00	Vial (ALE297)	GW
						500ml Plastic (ALE208)	GW
						250ml Amber Gl. PTFE/PE (ALE219)	GW
						0.5l glass bottle (ALE227)	GW
						500ml Plastic (ALE208)	GW
Ammonium Low	All	NDPs: 0 Tests: 8			X	X	
Anions by Kone (w)	All	NDPs: 0 Tests: 8			X	X	
Chromium III	All	NDPs: 0 Tests: 8			X	X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 8			X	X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 8			X	X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 8			X	X	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 8			X	X	
Low Level Hexavalent Chromium (w)	All	NDPs: 0 Tests: 8			X	X	
Low Level Phenols by HPLC (W)	All	NDPs: 0 Tests: 8			X	X	
Mercury Dissolved	All	NDPs: 0 Tests: 8			X	X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 8			X	X	
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 8			X	X	
pH Value	All	NDPs: 0 Tests: 8			X	X	
Total EPH (aq)	All	NDPs: 0 Tests: 8			X	X	
Total Metals by ICP-MS	All	NDPs: 0 Tests: 8			X	X	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container								Sample Type							
					500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Unfiltered (ALE204)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)		500ml Plastic (ALE208)	250ml Amber Gl. PTFE/PE (ALE219)	0.5l glass bottle (ALE227)				
X Test N No Determination Possible Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	27330610	MS-BH13	EW5	9.00																
	27330623	MS-BH17	EW5	6.00																
	27330636	MS-BH23	EW5	3.00																
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 8																		
VOC MS (W)	All	NDPs: 0 Tests: 8																		

27330636	MS-BH23	EW5	3.00	Vial (ALE297)	GW				X
				NaOH (ALE245)	GW				
				HNO3 Unfiltered (ALE204)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW		X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	AR-BH01		AR-BH02		DUP-BH02		MS-BH07		MS-BH12		MS-BH13	
#	ISO17025 accredited.		AR-BH01	F-MW892B-1T2F	AR-BH02	F-C979ZB-8T35	DUP-BH02	F-DR49ZB-0ZDD	MS-BH07	F-KFU8ZB-SMME	MS-BH12	F-79X8ZB-KC13	MS-BH13	F-I3Z8ZB-IJ37
M	mCERTS accredited.	Depth (m)	5.00	10.00	5.00	10.00	5.00	11.00	8.00	9.00	8.00	9.00	9.00	
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
diss.filt	Dissolved / filtered sample.	Date Sampled	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	
tot.unfilt	Total / unfiltered sample.	Date Received	15:45	14:50	13:15	10:00	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)	27330543	27330557	27330571	27330584	27330597	27330584	27330597	27330584	27330597	27330584	27330597	
(F) Trigger breach confirmed		AGS Reference	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	
1-4* @ Sample deviation (see appendix)														
Component	LOD/Units	Method												
Organic Carbon, Total	<3 mg/l	TM090	21.5	16.8	8.08	15.7	12.5	11.3	#	#	#	#	#	#
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.62	1.81	0.186	0.618	1.18	1.51	#	#	#	#	#	#
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.09	2.33	0.239	0.795	1.52	1.94	#	#	#	#	#	#
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003	<0.003	0.00574	<0.003	<0.003	#	#	#	#	#	#
Arsenic (diss.filt)	<0.5 µg/l	TM152	13.6	8.2	10.5	3.15	37	53.1	#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152	93.4	121	140	172	181	69.9	#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	5.74	<1	<1	#	#	#	#	#	#
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3	<0.3	1.59	<0.3	<0.3	#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	0.468	<0.2	<0.2	<0.2	#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	1.95	3.87	9.83	6.61	0.947	0.867	#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	1.4	<1	<1	#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152	2.65	1.09	2.18	3.42	1.57	1.31	#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	529	450	396	343	502	351	#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	37.4	9.39	7.19	0.87	34.7	7.5	#	#	#	#	#	#
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	1500	1350	1160	1010	1660	1030	#	#	#	#	#	#
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100	<100	<100	139	<100	#	#	#	#	#	#
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100	<100	<100	139	<100	#	#	#	#	#	#
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	#	#	#	#	#	#
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	#	#	#	#	#	#
Sulphate	<2 mg/l	TM184	816	1150	668	614	1210	712	#	#	#	#	#	#
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	#	#	#	#	#	#
Phenol (low level)	<0.5 µg/l	TM255	<0.5	1.54	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	#
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	#
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	#
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	1.54	<0.5	<0.5	<0.5	<0.5	#	#	#	#	#	#
pH	<1 pH Units	TM256	7.39	7.62	7.74	7.5	7.19	7.57	#	#	#	#	#	#
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5	<5	<5	<5	<5	#	#	#	#	#	#
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	#	#	#	#	#	#
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH23			
#	ISO17025 accredited.		F-KWV8ZB-AEBT	F-QA49ZB-6DLI			
M	mCERTS accredited.		6.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	14/12/2022	14/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:50	13:45			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	16/12/2022	16/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-30	221217-30			
	(F) Trigger breach confirmed	SDG Ref	27330623	27330636			
	1-4*# Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Organic Carbon, Total	<3 mg/l	TM090	20.3	7.45			
			#	#			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	1.58	0.195			
			#	#			
Ammoniacal Nitrogen Low as NH4	<0.01 mg/l	TM099	2.03	0.251			
			#	#			
Chromium, Trivalent (Low)	<0.003 mg/l	TM152	<0.003	<0.003			
Arsenic (diss.filt)	<0.5 µg/l	TM152	53.6	10.5			
			#	#			
Boron (diss.filt)	<10 µg/l	TM152	82.5	127			
			#	#			
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08			
			#	#			
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1			
			#	#			
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3	<0.3			
			#	#			
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	0.479			
			#	#			
Nickel (diss.filt)	<0.4 µg/l	TM152	3.91	9.86			
			#	#			
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1			
			#	#			
Zinc (diss.filt)	<1 µg/l	TM152	2.17	2.22			
			#	#			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	280	404			
			#	#			
Iron (Dis.Filt)	<0.019 mg/l	TM152	34.1	7.24			
			#	#			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	810	1180			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100	<100			
			#	#			
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01			
			#	#			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	<0.05			
			#	#			
Sulphate	<2 mg/l	TM184	637	644			
			#	#			
Nitrate as NO3	<0.3 mg/l	TM184	<0.3	<0.3			
			#	#			
Phenol (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Cresols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Xylenols (low level)	<0.5 µg/l	TM255	<0.5	<0.5			
Sum of Detected Monohydric Phenols	<0.5 µg/l	TM255	<0.5	<0.5			
pH	<1 pH Units	TM256	7.01	7.46			
			#	#			
Cyanide, Total (low level)	<5 µg/l	TM279	<5	<5			
			#	#			
Cyanide, Free (low level)	<2.5 µg/l	TM279	<2.5	<2.5			
			#	#			
Low Level Hexavalent Chromium	<0.003 mg/l	TM331	<0.003	<0.003			
			#	#			



CERTIFICATE OF ANALYSIS

SDG: 221217-30

Report Number: 674297

Superseded Report:

Client Ref.: F212561

Location: Keadby 3

GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH23			
#	ISO17025 accredited.		F-KWV8ZB-AEBT	F-QA49ZB-6DLI			
M	mCERTS accredited.		6.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	14/12/2022	14/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:50	13:45			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	16/12/2022	16/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.	Date Received	221217-30	221217-30			
(F)	Trigger breach confirmed	SDG Ref	27330623	27330636			
1-4*5@	Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
GRO >C5-C10	<10 µg/l	TM245	<10	<10			
EPH (C6-C10)	<100 µg/l	TM245	<100	<100			



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	AR-BH01		AR-BH02		DUP-BH02		MS-BH07		MS-BH12		MS-BH13	
#	ISO17025 accredited.		AR-BH01	F-MW89ZB-1T2F	AR-BH02	F-C979ZB-8T35	DUP-BH02	F-DR49ZB-0ZDD	MS-BH07	F-KFU8ZB-SMME	MS-BH12	F-79X8ZB-KC13	MS-BH13	F-I3Z8ZB-LJ37
M	mCERTS accredited.	Depth (m)	5.00	10.00	5.00	10.00	5.00	11.00	8.00	9.00	8.00	9.00	9.00	
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
diss.filt	Dissolved / filtered sample.	Date Sampled	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	
tot.unfilt	Total / unfiltered sample.	Date Received	15:45	14:50	13:15	10:00	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	16/12/2022	
* Subcontracted - refer to subcontractor report for accreditation status.		SDG Ref	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30	
** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		Lab Sample No.(s)	27330543	27330557	27330571	27330584	27330597	27330584	27330597	27330584	27330597	27330610	27330610	
(F) Trigger breach confirmed		AGS Reference	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5	
1-4*@\$@ Sample deviation (see appendix)		Method	TM178	TM178	TM178	TM178	TM178	TM178	TM178	TM178	TM178	TM178	TM178	
Component	LOD/Units	Method	Component	LOD/Units	Method	Component	LOD/Units	Method	Component	LOD/Units	Method	Component	LOD/Units	
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	TM178	<0.01	<0.01	TM178	<0.01	<0.01	TM178	<0.01	<0.01	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Phenanthrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	0.0053	<0.005	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	TM178	<0.002	<0.002	TM178	<0.002	<0.002	TM178	<0.002	<0.002	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	TM178	<0.005	<0.005	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	TM178	<0.082	<0.082	TM178	<0.082	<0.082	TM178	<0.082	<0.082	



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

PAH Spec MS - Aqueous (W)

Results Legend		Customer Sample Ref.	MS-BH17	MS-BH23			
#	ISO17025 accredited.		F-KWV8ZB-AEBT	F-QA49ZB-6DLI			
M	mCERTS accredited.		6.00	3.00			
aq	Aqueous / settled sample.	Depth (m)	Ground Water (GW)	Ground Water (GW)			
diss.filt	Dissolved / filtered sample.	Sample Type	14/12/2022	14/12/2022			
tot.unfilt	Total / unfiltered sample.	Date Sampled	10:50	13:45			
	* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	16/12/2022	16/12/2022			
	** % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Date Received	221217-30	221217-30			
	(F) Trigger breach confirmed	SDG Ref	27330623	27330636			
	1-4* @ Sample deviation (see appendix)	Lab Sample No.(s)	EW5	EW5			
		AGS Reference					
Component	LOD/Units	Method					
Naphthalene (aq)	<0.01 µg/l	TM178	<0.01	<0.01	#	#	
Acenaphthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Acenaphthylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Phenanthrene (aq)	<0.005 µg/l	TM178	0.0075	<0.005	#	#	
Fluorene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Chrysene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(b)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(k)fluoranthene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(a)pyrene (aq)	<0.002 µg/l	TM178	<0.002	<0.002	#	#	
Dibenzo(a,h)anthracene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Benzo(g,h,i)perylene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
Indeno(1,2,3-cd)pyrene (aq)	<0.005 µg/l	TM178	<0.005	<0.005	#	#	
PAH, Total Detected USEPA 16 (aq)	<0.082 µg/l	TM178	<0.082	<0.082	#	#	



Validated

CERTIFICATE OF ANALYSIS

SDG: 221217-30
Client Ref.: F212561

Report Number: 674297
Location: Keadby 3

Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	AR-BH01	AR-BH02	DUP-BH02	MS-BH07	MS-BH12	MS-BH13
#	ISO17025 accredited.		F-MW89ZB-1T2F	F-C979ZB-8T35	F-DR49ZB-0ZDD	F-KFU8ZB-SMME	F-79X8ZB-KCI3	F-13Z8ZB-LJ37
M	mCERTS accredited.	Depth (m)	5.00	10.00	5.00	11.00	8.00	9.00
aq	Aqueous / settled sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
dis.s.filt	Dissolved / filtered sample.	Date Sampled	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022	14/12/2022
tot.unfilt	Total / unfiltered sample.	Date Received	15:45	14:50	13:15	10:00	11:45	12:45
*	Subcontracted - refer to subcontractor report for accreditation status.	SDG Ref	221217-30	221217-30	221217-30	221217-30	221217-30	221217-30
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Lab Sample No.(s)	27330543	27330557	27330571	27330584	27330597	27330610
(F)	Trigger breach confirmed	AGS Reference	EW5	EW5	EW5	EW5	EW5	EW5
1-4*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Benzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Toluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1
			#	#	#	#	#	#
Sum of BTEX	<5 µg/l	TM208	<5	<5	<5	<5	<5	<5



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
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Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM152	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM255		Determination of Low Level Phenols in Waters and Leachates by HPLC
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser
TM331		Low Level Hexavalent Chromium

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 221217-30
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Test Completion Dates

Lab Sample No(s)	27330543	27330557	27330571	27330584	27330597	27330610	27330623	27330636
Customer Sample Ref.	AR-BH01	AR-BH02	DUP-BH02	MS-BH07	MS-BH12	MS-BH13	MS-BH17	MS-BH23
AGS Ref.	EW5	EW5	EW5	EW5	EW5	EW5	EW5	EW5
Depth	5.00	10.00	5.00	11.00	8.00	9.00	6.00	3.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water

Ammonium Low	22-Dec-2022	22-Dec-2022	23-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	23-Dec-2022
Anions by Kone (w)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Chromium III	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022	31-Dec-2022
Dissolved Metals by ICP-MS	04-Jan-2023	05-Jan-2023	05-Jan-2023	04-Jan-2023	04-Jan-2023	04-Jan-2023	05-Jan-2023	05-Jan-2023
EPH (DRO) (C10-C40) Aqueous (W)	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022
GRO by GC-FID (W)	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	22-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022
Low Level Cyanide (W)	20-Dec-2022	20-Dec-2022	22-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	22-Dec-2022
Low Level Hexavalent Chromium (w)	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022
Low Level Phenols by HPLC (W)	21-Dec-2022	21-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	23-Dec-2022	21-Dec-2022
Mercury Dissolved	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	22-Dec-2022	21-Dec-2022	22-Dec-2022	22-Dec-2022
Nitrite by Kone (w)	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022
PAH Spec MS - Aqueous (W)	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
pH Value	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	20-Dec-2022	23-Dec-2022
Total EPH (aq)	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022	29-Dec-2022
Total Metals by ICP-MS	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022	28-Dec-2022
Total Organic and Inorganic Carbon	20-Dec-2022	20-Dec-2022	18-Dec-2022	18-Dec-2022	18-Dec-2022	18-Dec-2022	18-Dec-2022	20-Dec-2022
VOC MS (W)	21-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022	21-Dec-2022



CERTIFICATE OF ANALYSIS

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Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Matrix interference
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.